MAY 15, 1955

MODERN MEDICINE

The Journal of Diagnosis and Treatment

NEUROLOGIC SEQUELAE TO SPINAL ANESTHESIA

by Dr. Robert D. Dripps

Table of contents page 2

Rx INFORMATION

TACE

INDICATIONS: Menopause, prostatic carcinoma, postpartum breast engorgement.

COMPOSITION: Each capsule, or 1 cc., contains 12 mg. of TACE (Chlorotrianisene).

SAFETY: TACE produces a minimal incidence of withdrawal bleeding so commonly observed following estrogen therapy of the menopause. In both sexes, TACE is generally well tolerated, thus minimizing such side effects as nausea, vomiting and fluid retention.

DOSAGE: For relief of menopausal symptoms, 2 TACE Capsules, or 2 cc. TACE Oral Drops (in cold water), daily for thirty days, is generally a course of therapy. In severe cases when symptoms recur, additional short courses of TACE may be required. For postpartum breast engorgement, 4 TACE Capsules daily for seven days. For palliative control of prostatic carcinoma, 1 or 2 TACE Capsules daily.

SUPPLIED: In bottles of 70 and 350 capsules; in 30 cc. bottles with calibrated dropper. One bottle of capsules or 2 bottles of oral drops usually suffice for a course of therapy.

References: 1. Greenblatt, R. B., and Brown, N.H.: Am. J. Obst. & Gyn. 63:1161, June, 1952. 2. Ausman, D.C.: Wisconsin M. J. 53:122, 1954. 3. Woodhall, R. B.: Obst. & Gyn. 3:201, 1954. 4. Ivey, H. S.: J. Med. Soc. N. J. (In press)

The Wm. S. Merrell Company
CINCINNATI
New York • St. Thomas, Ontario
PIONEER IN MEDICINE FOR OVER 125 YEARS

TACE... released like a hormonal secretion for your menopause patient

TACE, by virtue of its storage in body fat,[1] simulates the hormonal secretion of an endocrine gland by its gradual, even release from this depot.

TACE gives smooth, long-lasting control of symptoms[2]... minimal withdrawal bleeding[3]... and restoration of the "sense of belonging".[4]

A smoother adjustment to the menopause with a short, simple course of oral treatment.

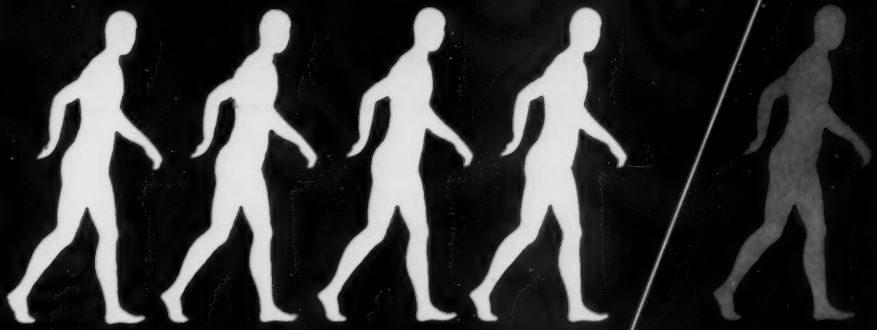
TACE

ORAL "FAT-STORED ESTROGEN"

Merrell
Since 1828

TACE[R]

ANOTHER EXCLUSIVE DEVELOPMENT OF MERRELL RESEARCH



you can prevent attacks of angina pectoris

Peritrate, a long-acting coronary vasodilator, has repeatedly demonstrated its effectiveness in preventing attacks of angina pectoris in 4 out of 5 cases.[1,2,3]

Prophylaxis with Peritrate results in fewer, less severe attacks, reduced nitroglycerin dependence, improved EKG's where abnormal patterns exist and increased exercise tolerance.

Peritrate's action is similar to that of nitroglycerin but considerably more prolonged . . . "favorable action [can] be elicited for 5 hours or more after its administration."[4]

Usual dosage is 10 to 20 mg. *before meals* and at bedtime.

The specific needs of most patients and regimens are met with Peritrate's four dosage forms. Peritrate is available in both 10 and 20 mg. tablets; Peritrate Delayed Action (10 mg.) allows uninterrupted continuation of protection through the night. Peritrate with Phenobarbital (10 mg., with phenobarbital 15 mg.) where sedation also is required.

1. Winsor, T., Humphreys, P.: Angiology *3*:1 (Feb.) 1952. 2. Plotz, M.: N. Y. State J. Med. *52*:2012 (Aug. 15) 1952. 3. Dailheu-Geoffroy, P.: L'Ouest-Médical, vol. 3 (July) 1950. 4. Russek, H. I., *et al.*: Am. J. M. Sc. *229*:46 (Jan.) 1955.

Peritrate®

tetranitrate

(BRAND OF PENTAERYTHRITOL TETRANITRATE)

WARNER-CHILCOTT

MODERN CONTENTS

Volume 23
Number 10

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Address all correspondence to 84 South 10th Street, Minneapolis 3, Minn.

DEPARTMENTS

SPECIAL ARTICLE

MEDICINE

MEDICINE
for May 15, 1955

Walter C. Alvarez

Editor-in-Chief

•

THE MAN ON THE COVER is Dr. Robert D. Dripps of Philadelphia, Professor and Chairman of the Department of Anesthesiology at the University of Pennsylvania Graduate School of Medicine. Dr. Dripps is director of anesthesiology at the Hospital of the University of Pennsylvania, a member of the Subcommittee on Anesthesia of the National Research Council, and chairman of the Regional Survey Committee of the American Board of Anesthesiology. He is a member of several medical organizations, including the American Society for Clinical Investigation and the American College of Anesthesiologists. He is an associate editor of *Anesthesiology*. A report of a recent article by Dr. Dripps, "Neurologic Sequelae to Spinal Anesthesia," appears on page 110.

CONTINUED

Contents for May 15 1955

unexcelled among sulfa drugs . . .

for Highest Potency • Wide Spectrum
Highest Blood, Plasma & Tissue Levels
Safety • Minimal Side Effects* • Economy

*Few therapeutic agents, and none of the other sulfas, can claim the same degree of freedom from toxic side effects offered by the Triple Sulfas. The use of only a fractional dosage of each component sulfa drug reduces the possibility of undesirable side effects to an absolute minimum. No case of agranulocytosis has been reported resulting from their use.

Because they are so well tolerated, because of their wide spectrum of effectiveness and their outstanding economy, the Council-accepted Triple Sulfas are now more widely used than any single sulfa drug.

Triple Sulfas, alone or in combination with certain other agents, are available from leading pharmaceutical manufacturers under their own brand names.
This message is presented on their behalf.

TRIPLE SULFAS

Meth-Dia-Mer Sulfonamides

All Sulfas are not Triple Sulfas!
ASK ANY MEDICAL REPRESENTATIVE ABOUT THE TRIPLE SULFA PRODUCTS HIS COMPANY OFFERS!

Cyanamid Fine Chemicals

AMERICAN Cyanamid COMPANY Fine Chemicals Division, 30 Rockefeller Plaza, New York 20, N.Y.

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Contents for May 15 1955

Business Manager: M. E. Herz. Address all correspondence to 84 South 10th Street, Minneapolis 3, Minn. Telephone: Bridgeport 1291. ADVERTISING REPRESENTATIVES: New York 17: Lee Klemmer, Bernard A. Smiler, John Winter, 50 East 42nd Street, Suite 401. Telephone: Murray Hill 2-8717. CHICAGO 6: Jay H. Herz, Hugh T. Gibson, 20 North Wacker Drive, Suite 1921. Telephone: Central 6-4619. SAN FRANCISCO 4: Duncan A. Scott & Co., Mills Bldg. Telephone: Garfield 1-7950. LOS ANGELES 5: Duncan A. Scott & Co., 2978 Wilshire Blvd. Telephone: Dunkirk 8-4151.

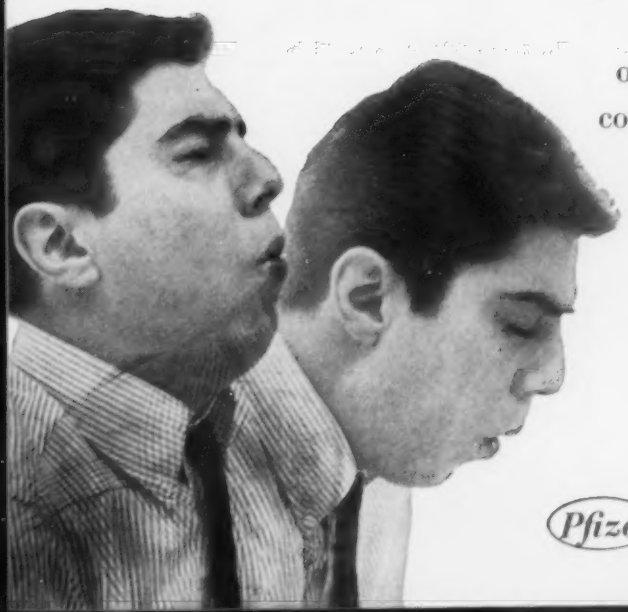
Pfizer

Now...control of irritating, exhausting cough with *new*

TOCLASE*

BRAND OF CARBETAPENTANE CITRATE

without the undesirable effects associated with the usual opiates or their derivatives commonly employed in cough control.



Toclase Syrup
Bottles of one pint

Toclase Expectorant Compound
Bottles of one pint

Toclase Tablets
25 mg., bottles of 25

*TRADEMARK

Pfizer

PFIZER LABORATORIES
Division, Chas. Pfizer & Co., Inc.
Brooklyn 6, N. Y.

CONTINUED

Contents for May 15 1955

for peptic ulcer

ROBALATE®

provides two-way protection, with an antacid-demulcent action superior in many ways to that of dried aluminum hydroxide gel. It is 42% more efficient in acid-consuming power[2]...more rapid in its neutralizing action[1]...is not inhibited by pepsin[3]...does not disturb bowel activity[4]...and its effectiveness is not diminished by age.[3]

Each tablet contains:
Dihydroxy aluminum aminoacetate....0.5 Gm.

OR AS EACH CASE MAY REQUIRE

- blocks acid erosion
- blocks local irritation
- blocks a hyperactive vagus
- blocks emotional tension

DONNALATE®

provides four-way protection, with Robalate's superior antacid-demulcent action, plus Donnatal's recognized spasmolytic-sedative effectiveness.

Each tablet contains:

Dihydroxy aluminum aminoacetate	0.5 Gm.
Hyoscyamine sulfate	0.052 mg.
Atropine sulfate	0.010 mg.
Hyoscine hydrobromide	0.003 mg.
Phenobarbital (⅛ gr.)	8.1 mg.

(Each Donnalate tablet = 1 Robalate tablet + ½ Donnatal tablet)

Both Robalate and Donnalate are *free from grittiness* and the chalky feeling usually associated with many antacids...*free from side effects*, such as systemic alkalosis and disturbance of bowel activity.

DOSAGE: 1 or 2 tablets after each meal and before retiring, or as directed.

SUPPLY: Bottles of 100 and 500 white (Robalate) or yellow (Donnalate) tablets.

REFERENCES: 1. Hammarlund, E. R., Rising, L. W., J. Am. Pharm. Assn. (Sci. Ed.), 38:586, 1949. 2. Kraus, J. C. Jr., et al., J. Pharmacol. Exper. Therap. 82:247, 1944. 3. Murphey, R. S., J. Amer. Pharm. Assn. 41:361, 1952. 4. Rawling, J. R., et al., Rev. Gastroenterol, 16:856, 1949.

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Ethical Pharmaceuticals of Merit since 1878

MODERN MEDICINE

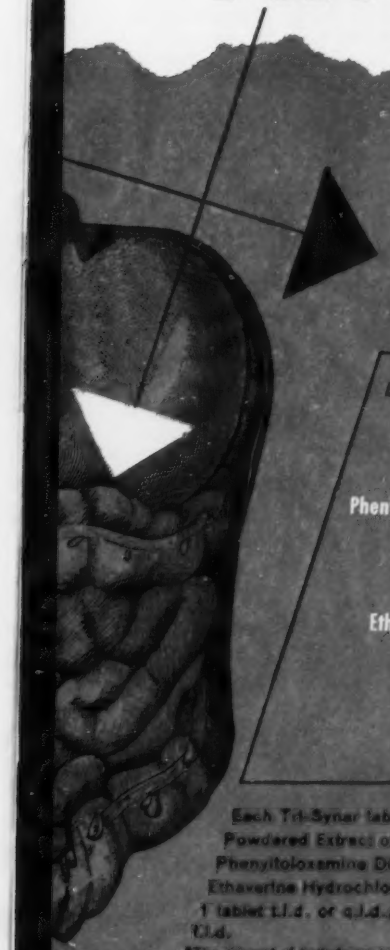
Therapeutic Index

for May 15, 1955

THIS INDEX, prepared for your convenience, lists all advertised products. Some products may be specifically indicated for more than one category, but space restricts listings to one category only. Details concerning the use of these products may be had by referring to pages listed, or by writing the manufacturer.

New product... for triple attack on smooth muscle spasm

TRI-SYNAR



Tri-Synar—predominantly a parasympathetic sedative—combines anticholinergic, antihistaminic and direct musculotropic action for better control of spasm.

Tri-Synar works like this:

Drugs in Tri-Synar →	Produce these effects →	For better control of spasm
Belladonna	Excellent anticholinergic effect Antihistaminic effect	Triple synergism produces excellent belladonna effect with fractional doses of belladonna and minimal side actions
Phenyltoloxamine	Excellent antihistaminic effect Low toxicity (drowsiness remarkably rare) Atropine-like effect	
Ethaverine	Musculotropic effect Excellent inhibition of smooth muscle spasm of gastrointestinal and biliary tracts Atropine-like effect Free of addicting properties	

Each Tri-Synar tablet contains:

Powdered Extract of Belladonna* ..... 4.1 mg.
Phenyltoloxamine Dihydrogen Citrate ..... 20.0 mg.
Ethaverine Hydrochloride ..... 20.0 mg.

1 tablet t.i.d. or q.i.d.; in more severe cases, 2 tablets t.i.d.

*The amount of belladonna is equivalent to 0.3 minims of tincture of belladonna.

Bottles of 100

THE ARMOUR LABORATORIES
A DIVISION OF ARMOUR AND COMPANY · KANKAKEE, ILLINOIS

for

those

"on the mend"

specify

VITERRA®

THERAPEUTIC

Therapeutic formula

11 minerals, 9 vitamins—
for prompt nutritional recovery
following illness. All in one
soft gelatin capsule.

for

those

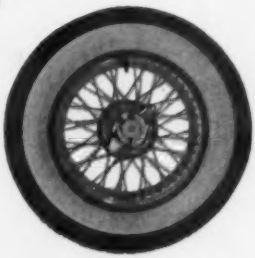
"on the go"

specify

VITERRA®

Supplemental formula

11 minerals, 10 vitamins—
ideal as the prophylactic
mineral-vitamin capsule.
All in one soft gelatin capsule.

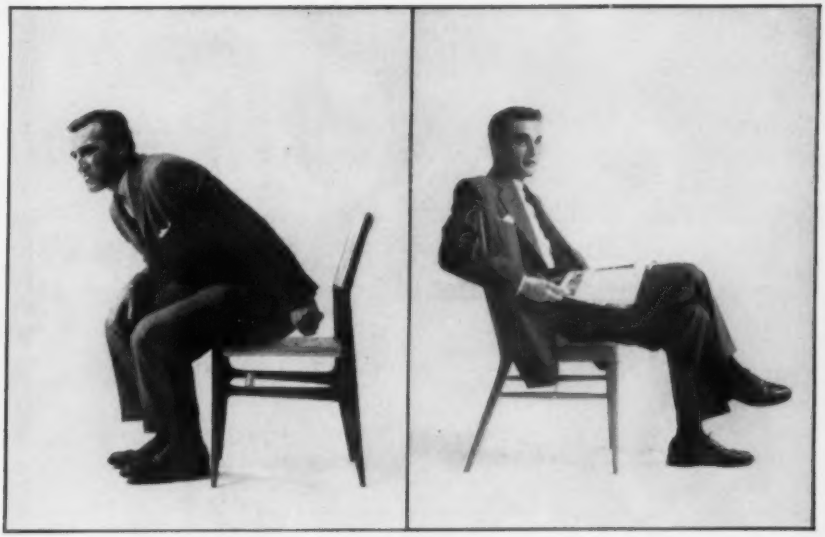


balanced formulae: for balanced nutrition Roerig *Chicago 11, Illinois*

MODERN MEDICINE

THE JOURNAL OF DIAGNOSIS AND TREATMENT

Of two patients with pruritus ani...



one is at his wit's end—his lesion excoriated by constant scratching, peace of mind gone, and sleep, too.

The other is symptomatically controlled.

Calmitol makes the difference

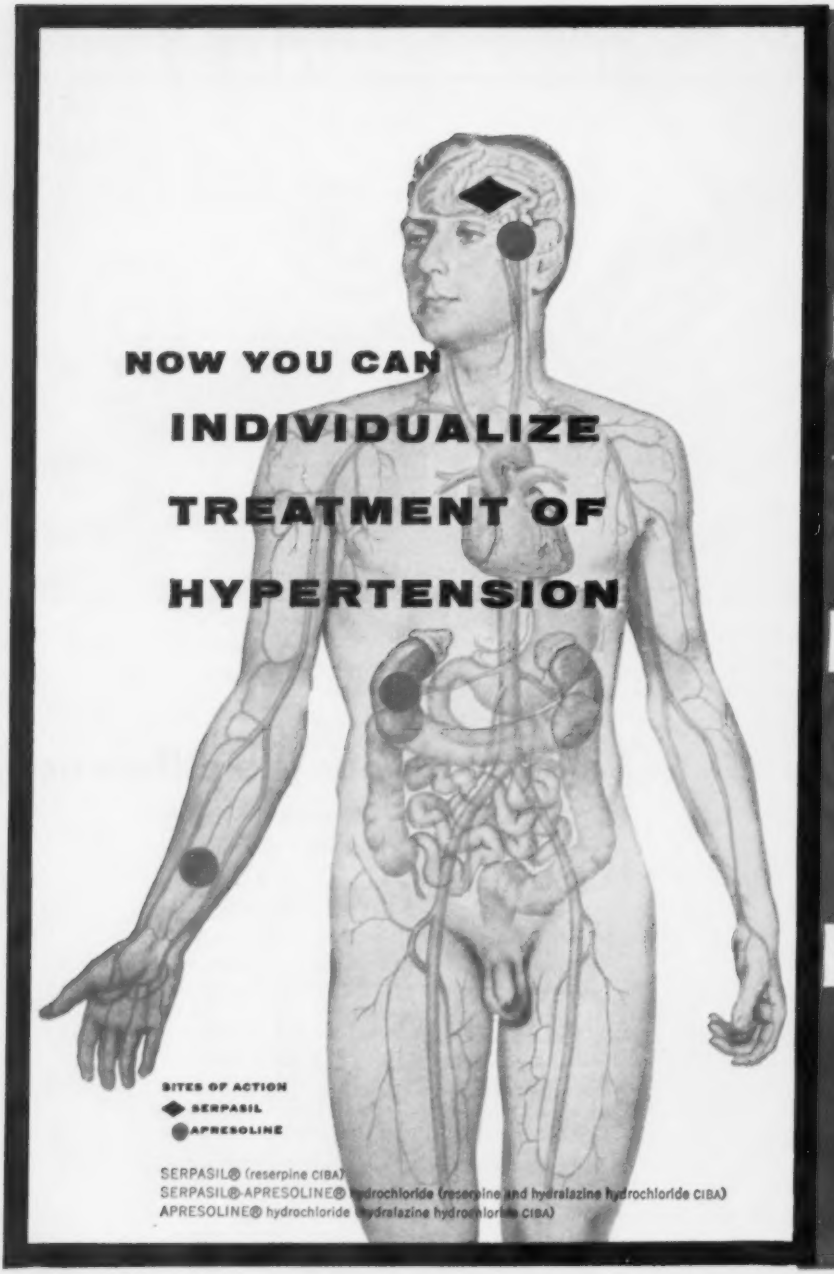
Nonsensitizing and free of the dangers of "rebound dermatosis," Calmitol is "preferred"[1] by physicians for its safe and prolonged antipruritic action.

the bland antipruritic

1½ oz. tubes and 1 lb. jars

1. Lubowe, I. I.: New York State J. Med. 50:1743, 1950.

Thos. Leeming & Co. Inc. 155 East 44th Street, New York 17, N. Y.


NOW YOU CAN
INDIVIDUALIZE
TREATMENT OF
HYPERTENSION
SITES OF ACTION
SERPASIL
APRESOLINE
SERPASIL® (reserpine CIBA)
SERPASIL®-APRESOLINE® hydrochloride (reserpine and hydralazine hydrochloride CIBA)
APRESOLINE® hydrochloride (hydralazine hydrochloride CIBA)

For initial therapy—in all cases:

SERPASIL, a pure crystalline alkaloid of rauwolfia root—particularly effective in the neurogenic forms of hypertension. *Acts centrally*—tranquilizes, moderately lowers blood pressure, slows heart rate.

Serpasil®

When combination therapy is indicated:

SERPASIL-APRESOLINE, a combination product offering convenience and economy in the more complicated cases involving both neurogenic and humoral factors.

Serpasil®-Apresoline®

In more refractory cases requiring further individualization of dosage:

APRESOLINE *acts centrally and peripherally* for a marked antihypertensive effect. Increases renal plasma flow—produces vasodilatation—inhibits pressor substances.

Apresoline®

Serpasil Tablets, 0.1 mg., 0.25 mg. and 1.0 mg.
Parenteral Solution (for neuropsychiatric use only), 2.5 mg. per ml., in 2-ml. ampuls.
Elixir, 0.2 mg. per 4-ml. teaspoonful.

Serpasil-Apresoline Tablets, each containing 0.1 mg. of Serpasil and 25 mg. of Apresoline.
Tablets, each containing 0.2 mg. of Serpasil and 50 mg. of Apresoline.

Apresoline Tablets, 10 mg., 25 mg., 50 mg. and 100 mg.
Ampuls, 1 ml., 20 mg. per ml.

CIBA
SUMMIT, N. J.

MODERN MEDICINE

THE JOURNAL OF DIAGNOSIS AND TREATMENT

from an editorial in the J.A.M.A.
(156:991, Nov. 6, 1954):

Oral broad spectrum antibiotic therapy
may cause infection with Candida albicans

A new concept in antibiotic therapy

antibacterial therapy
plus
antifungal prophylaxis
in one capsule

Each Mysteclin capsule, containing 250 milligrams of tetracycline hydrochloride and 250,000 units of nystatin, costs the patient only a few pennies more than does tetracycline alone.

Minimum adult dose: 1 capsule q.i.d.
Supply: Bottles of 12 and 100.

MYSTECLIN

SQUIBB TETRACYCLINE—NYSTATIN

antibacterial · antifungal

"MYSTECLIN" IS A SQUIBB TRADEMARK.

SQUIBB

LETTER FROM THE EDITORS

Dear Reader:

Your editors got a pleasant surprise in the mail the other day. Here it is.

This citation should read "To the Readers of *Modern Medicine*," for without your loyalty and encouragement the achievement would not have been possible.

The Editors

new!

Mio-Pressin* the first specific

3-way attack on hypertension

'Mio-Pressin' is a carefully balanced combination of 3 antihypertensive agents —rauwolfia, protoveratrine, and Dibenzyline†. 'Mio-Pressin' is effective in the treatment of mild, moderate and severe hypertension.

In pre-introductory clinical trials covering 691 patients, 'Mio-Pressin' produced significant clinical improvement in 70% of patients. The investigators report that 'Mio-Pressin'—unlike other potent antihypertensives—produces a gradual lowering of blood pressure over a period of 3 to 4 weeks that allows the patient to adjust to his changed vascular status. Side effects are generally mild and often transitory.

'Mio-Pressin' is available in two strengths:

'Mio-Pressin' (**No. 1;** half strength).

Each capsule contains:

Rauwolfia serpentina (whole root)	12.5 mg. equiv. (biologically assayed)
Protoveratrine	0.1 mg.
Dibenzyline† (phenoxybenzamine hydrochloride, S.K.F.)	2.5 mg.

'Mio-Pressin' (**No. 2;** standard strength).

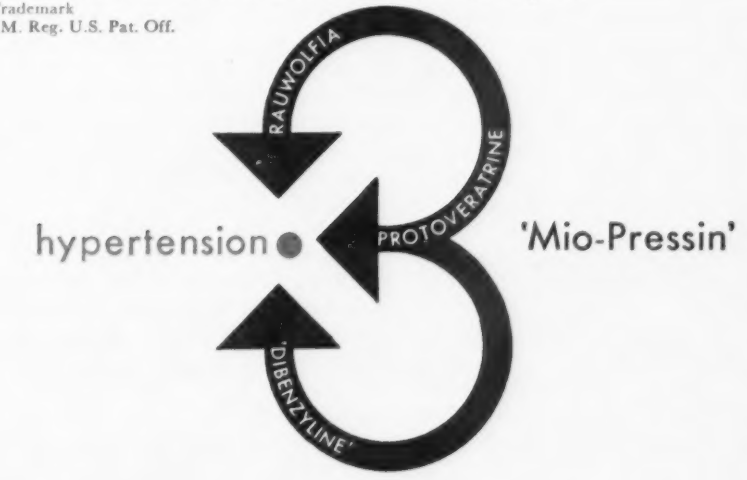
Each capsule contains:

Rauwolfia serpentina (whole root)	25 mg. eqv. (biologically assayed)
Protoveratrine	0.2 mg.
Dibenzyline† (phenoxybenzamine hydrochloride, S.K.F.)	5 mg.

To obtain best results with 'Mio-Pressin', it is of utmost importance to read carefully the Administration and Dosage suggestions in the 'Mio-Pressin' literature.

Smith, Kline & French Laboratories, Philadelphia

★Trademark
†T.M. Reg. U.S. Pat. Off.



Correspondence

Communications from the readers of MODERN MEDICINE *are always welcome. Address communications to The Editors of* MODERN MEDICINE, *84 South 10th St., Minneapolis 3, Minn.*

Patients Were Not Authors'

TO THE EDITORS: It should be pointed out that the article on cortisone, corticotropin, and antimicrobial therapy for tuberculosis in animals and man which was abstracted in *Modern Medicine* (Mar. 15, 1955, p. 104) was a review article and that the conclusions were based on the experience of others. We did not, as the article implies, treat 31 patients.

J. R. JOHNSON, M.D.

Ann Arbor

Exchange Transfusion

TO THE EDITORS: Thank you for abstracting our article on the treatment of erythroblastosis fetalis by exchange transfusion (*Modern Medicine*, Mar. 1, 1955, p. 117). I understand the difficulties entailed in condensing the important points of a 20-page article into a page and a half and therefore would like to mention 3 brief items that if added to the abstract would perhaps round it out.

First, the blood that is used in the exchange transfusion is not whole citrated blood, as is implied in your abstract, but is concentrated blood. This is blood either freshly drawn into ACD mixture or at most one to four days old which has been centrifuged or allowed to settle and from which 150 cc. of plasma has been removed. The hematocrit of blood so treated is about 0.5. The use of concentrated blood plus initial bleeding of the infant of 50 cc. increases the efficiency of the exchange so that with 1 unit a better than 95% exchange is effectuated. In addition, the smaller volume used shortens the procedure, reduces the amount of citrate infused, and leaves the infant with higher hemoglobin and hematocrit without change in blood volume.

Second, mention should be made of the marked reduction in both the mortality rate and the incidence of kernicterus. By modern methods of management, the mortality rate has been reduced in severely affected erythroblastotic infants from close to 50% without treatment to about 5%.

Finally, the illustration which was included in the abstract is not at all representative of the incision that we make to expose the radial artery. Actually, the incision is transverse rather than longitudinal and is about ⅜ in. long. The arteriotomy, furthermore, is made not

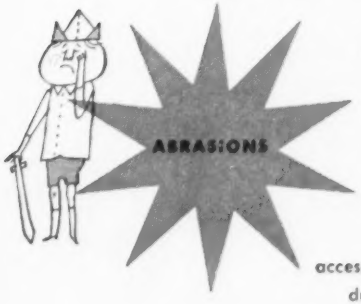
(Continued on page 26)

nonsensitizing . . . rapid acting . . . topical anesthetic

XYLOCAINE® OINTMENT ASTRA

(Brand of lidocaine*)

a new form of the widely accepted Xylocaine Hydrochloride solution

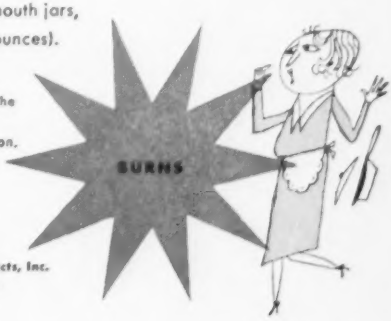


- Xylocaine Ointment provides unusually rapid, and deeply penetrating anesthesia without the drawback of toxicity, sensitization or irritation. Xylocaine is unique in this respect.

- For use in the control of itching, burning and other dermatologic distress. May also be applied liberally on skin and accessible mucous membranes to prevent pain during examination or instrumentation.

- Available in a water soluble, nonstaining vehicle as 2.5% and 5% Xylocaine base in collapsible tubes or wide-mouth jars, each containing 35 grams (approx. 1.25 ounces).

Xylocaine Ointment is now made available at the request of many physicians, surgeons, and anesthetists who routinely use Xylocaine Solution.



ASTRA

Astra Pharmaceutical Products, Inc.
Worcester 6, Massachusetts

*U. S. Patent No. 2,441,498

Cantankerous

"Stubborn and hard-to-manage" not only describes the disposition of the patient but the character of the spasm and tension that makes him that way.

In many conditions characterized by spasm, irritability and tenseness, "Sedatives and antispasmodics play a very important part in control of excessive emotional and parasympathetic stimuli ..."[1]

For completely adequate antispasmodic-sedative action—without risk of cumulation or development of tolerance to the sedative component—

BUTIBEL*

—combines an antispasmodic and a sedative with approximately equal durations of action.

Butibel may be given at suitable intervals without fear of overlapping sedative action or inadequate antispasmodic effect. The danger of accumulation and development of tolerance associated with the use of the long-acting barbiturates at frequent intervals[2,3] is avoided with Butibel.

Butibel combines the desirable actions of the "intermediate" daytime sedative—Butisol® Sodium—and the natural alkaloids of belladonna (classic smooth muscle relaxant). Each tablet or 5 cc. (one teaspoonful) represents: Butisol Sodium 10 mg. (⅙ gr.), Ext. Belladonna 15 mg. (¼ gr.)

Tablets: 100s and 1000s; Elixir: pints and gallons.

1. Donovan, E. J.: Diagnosis and Treatment of the Irritable Colon Syndrome, Rocky Mountain M. J. 50:952 (Dec.) 1953.
2. Butler, T. C., Mahaffee, C. and Waddell, W. J.: Phenobarbital: Studies of Elimination, Accumulation, Tolerance, and Dosage Schedules, J. Pharmacol. & Exper. Therap. *111*:425 (Aug.) 1954.
3. Shideman, F. E.: Sedatives and Hypnotics II: Barbiturates in Drill, V. A.: Pharmacology in Medicine, New York, McGraw-Hill Book Company, Inc., 1954, p. 14/10.

*Trade-mark

McNEIL LABORATORIES, INC., PHILADELPHIA 32, PA.

with the knife parallel to the artery but at an angle, so that only a tiny flap in the vessel is opened. Healing and recanalization then occur readily.

IRVING B. WEXLER, M.D.
Brooklyn

Treatment of Breast Cancer

TO THE EDITORS: Articles on the treatment of breast cancer in the March 1, 1955 issue of *Modern Medicine* are good but not plain spoken enough. It was nearly sixty years ago that the idea of removing a malignant growth with its lymph territory was developed. Wider and wider anatomic exercises on the operating table have shown that if the theory is valid, the practice is imperfect. Our pathology and logic are not realistic when, knowing the front to be far advanced, we conduct rear-guard actions in the axilla, supraclavicular fossa, and around the internal mammary artery. We know pitifully little of the natural history of cancer. The reasons for varying speeds of growth in different people are unknown. We emphasize lymph spread and minimize blood spread, and no one knows how soon a growth metastasizes.

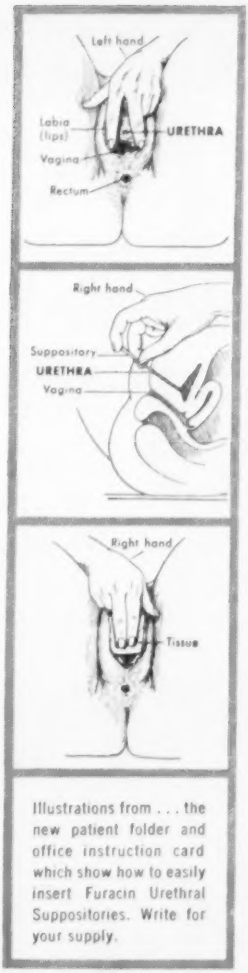
Surgical statistics give little credit to these factors, and we credit ourselves for things with which we have nothing to do. In thirty-two years of experience, I have never seen a patient with internal or breast cancer cured in the sense

(Continued on page 32)

new . . .
faster,
painless
treatment of
Urethritis

Treatment with Furacin Urethral Suppositories "does away with the pain of urethral dilatations and silver nitrate applications. Symptomatic improvement has been noticed as early as 1 day after beginning treatment, and the average period of treatment is 13 days. The patient can easily use the medication at home herself."*

*Youngblood, V. H.: J. Urol. 70: 926, 1953.



Illustrations from . . . the new patient folder and office instruction card which show how to easily insert Furacin Urethral Suppositories. Write for your supply.

new . . .
effectiveness
in treatment
of ***Urethritis***

Of 40 cases of nonspecific urethritis, 40 were entirely symptom-free or improved.

"The results showed that twenty-eight were entirely symptom-free at the end of the treatment and twelve improved. Many of the patients who were improved probably could have been termed cured had they been seen again. The urethra by endoscopic examination in every case was improved, though there was no close parallelism with the symptoms."*

Furacin Urethral Suppositories contain Furacin 0.2% and 2% diperodon•HCl (an efficient local anesthetic) in a water-miscible base.

Box of 12, each suppository hermetically sealed in foil.

Furacin® Urethral Suppositories

brand of nitrofurazone, Eaton

EATON LABORATORIES
NORWICH • NEW YORK

THE NITROFURANS – A UNIQUE CLASS OF ANTIMICROBIALS . . . PRODUCTS OF EATON RESEARCH

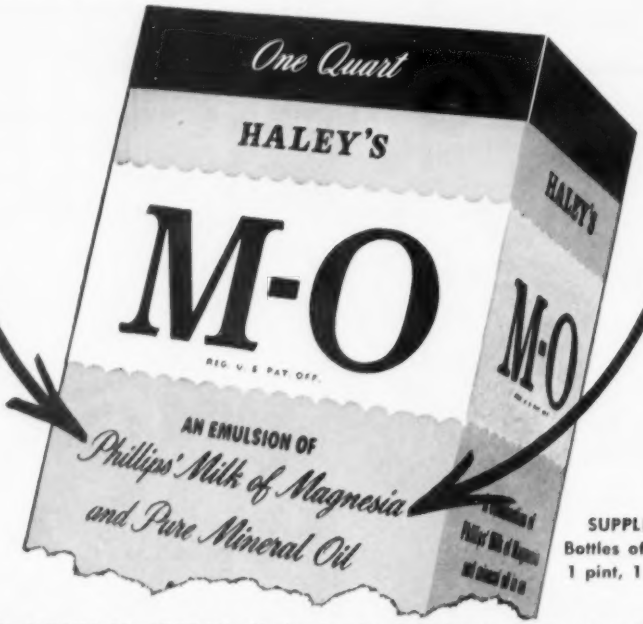
Smooth-Working Combination

TO HELP CORRECT CONSTIPATION

Antacid • Laxative • Lubricant

Magnesium Hydroxide plus pure mineral oil make Haley's M-O a smooth working antacid-laxative-lubricant that efficaciously relieves constipation and the attendant gastric hyperacidity.

The oil globules in Haley's M-O are minutely subdivided to assure uniform distribution and thorough mixture with intestinal contents. Oil leakage is avoided and a comfortable evacuation is effected through stimulation of normal intestinal rhythm and blunted defecation reflex.



SUPPLIED:
Bottles of 8 oz., 1 pint, 1 quart.

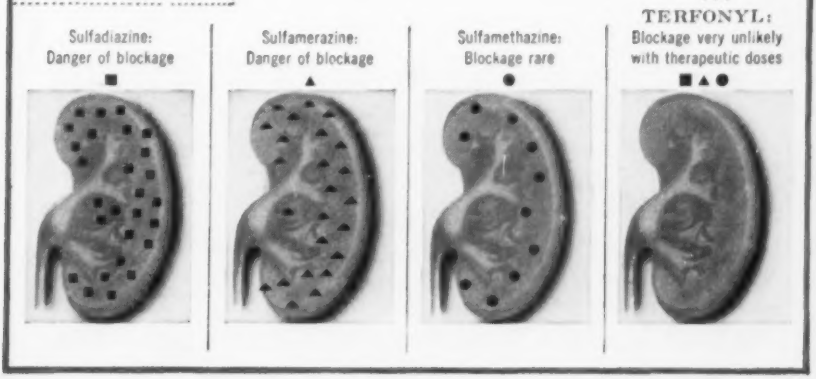
THE CHAS. H. PHILLIPS CO. DIVISION *of Sterling Drug Inc.* **1450 Broadway, New York 18, N. Y.**

TERFONYL

Sulfadiazine
Sulfamerazine
Sulfamethazine

FOR SAFER SULFONAMIDE THERAPY....

Low Renal Toxicity



With usual doses of Terfonyl the danger of kidney blockage is virtually eliminated. Each of the three components is dissolved in body fluids and excreted by the kidneys *as though it were present alone.* The solubility of Terfonyl is an important safety factor.

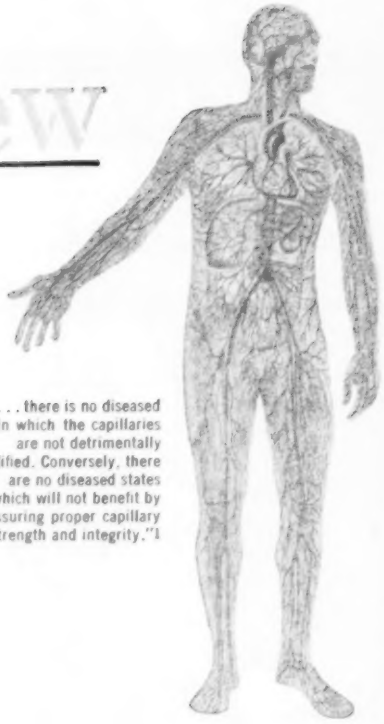
Terfonyl contains equal parts of sulfadiazine, sulfamerazine and sulfamethazine, chosen for their high effectiveness and low toxicity.

Terfonyl Tablets 0.5 Gm. Bottles of 100 and 1000

Terfonyl Suspension, 0.5 Gm. per 5 cc.
Appetizing raspberry flavor • Pint bottles

SQUIBB A NAME YOU CAN TRUST

new



"... there is no diseased state in which the capillaries are not detrimentally modified. Conversely, there are no diseased states which will not benefit by assuring proper capillary strength and integrity."[1]

Exerts a biochemical synergism

to restore normal permeability

In 1945, The National Drug Company made available the *first* oral hesperidin-ascorbic acid preparation. Now, *National* offers HESPER-C . . . a new and more potent synergistic combination of hesperidin—*the* active principle of citrin (Vitamin P mixture)[2,3,4,5]—and ascorbic acid.

Hesperidin is essential for the absorption and retention of ascorbic acid.

In addition, hesperidin appears to catalyze the combining of ascorbic acid with a protein to form the intercellular cement which protects capillary integrity.

DOSAGE: Initially, 6 capsules or more per day for the first week. Then 4 capsules daily.

Note: Clinical experience shows that success in restoring capillary integrity is in direct ratio to adequate dosage.

SUPPLIED: HESPER-C (hesperidin, 100 mg., and ascorbic acid, 100 mg.) capsules, in bottles of 100 and 1000.

By or on prescription only.

The National Drug Company
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Indications*:

Obstetric Management
Spontaneous Abortion—Early or Late
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Infections—Rheumatic Fever, Tuberculosis
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Bronchial Asthma—Allergic Purpuras
Prevention of Vascular Damage in Roentgen and Anticoagulant Therapy
Stress
Toxicity—Due to Chemical Agents
Fractures
Surgery—Disruption of Wounds

References:

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3. Bacharach, A. L.; Coates, M. E., and Middleton, T. R.: *Biochem. J.* 36: 407, 1942.
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5. Zacho, C. E.: *Acta path. et microbiol. scandinav.* 16: 144, 1939.

*Send for new HESPER-C brochure with Paul Peck drawings.

to prevent capillary fragility

Hesper-C Capsules

NATIONAL

A new formulation of hesperidin and ascorbic acid

(based on the original research in bioflavonoid—ascorbic acid synergism by the National Drug Research Laboratories)

that the reasonable man understands the term. I have seen a patient dying with metastases who had a radical Halsted operation for breast cancer thirty-one years previously. If the patient had been killed in a car wreck two or three years earlier, she would have been recorded as a patient with cancer cured by operation!

I have attended five women with breast cancer who refused all treatment; 3 averaged 51 years of age and lived an average of five years after they discovered the growth; 2, aged 67 and 70 years, lived nine and one-half and eight and one-fourth years respectively before dying of cancer. The longest interval of survival in my own series of breast cancer operations is fifteen years, and 1 patient lived nine years. None of the rest did so well.

I think improvement in breast cancer surgical statistics means that the surgeon operated early in the development of the growth. The patient's death took place at the normal end of the tumor's growth. In surgery of internal cancers, we are little if any further advanced today than when von Mikulicz said, "We do not operate for cancer. We merely operate for the complications of cancer." Apart from the life-prolonging operations which remove obstruction, bleeding, or ulceration, it is doubtful if the surgeon's macroscopic attacks upon microscopic pathology alter the natural history of the growth.

I think Edinburgh has the best

ECZEMATOID DERMATITIS

before...
and 7 days after
treatment with

VIOFORM®
Cream

Bactericidal, fungicidal, protozoacidal – virtually non-irritating, nonsensitizing, nontoxic – effective topical prescription for eczema and many other dermatoses. Vioform Cream 3% (water-washable base) and Ointment 3% (petrolatum base) in 50-Gm. tubes and 1-lb. jars.

Vioform® (iodochlorhydroxyquin U.S.P. CIBA)

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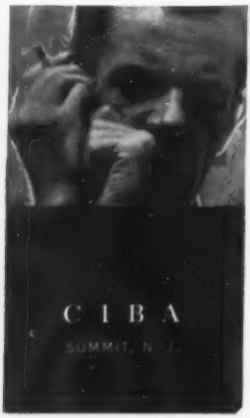
for your tense peptic ulcer patients

new
ANTRENYL® - PHENOBARBITAL

depresses... ...gastrointestinal motility

...gastric acid secretion

...nervousness and irritability so common in the ulcer diathesis



SUPPLIED: Antrenyl-Phenobarbital Tablets (scored), each tablet containing 5 mg. Antrenyl and 15 mg. phenobarbital.

Other forms: Tablets, 5 mg. Syrup, 5 mg. per 4-ml. teaspoonful. Pediatric Drops, 1 mg. per drop.

Antrenyl® bromide (oxyphenonium bromide CIBA)

9/ 2060M

survival rates of this decade for surgery of breast cancer. The surgeons there have not done radical breast operations for nearly ten years, and McWhirter follows their simple mastectomies with x-ray radiation heavy enough to produce moist desquamation. First-hand familiarity with Edinburgh methods convinces me that the risks from their x-ray dosage make the method generally inapplicable. In my own cases here in Arkansas, the results of deep x-ray therapy given by well-trained and conscientious men with the best of equipment have been disappointing.

If truth is really what we seek, a beginning might be made by abandoning the use of the word "cure." If we do, we might realize that although the methods we use are the best 1955 can offer, real cure might come in the future from methods now unknown to us.

FRANK RIGGALL, M.D.
Prairie Grove, Ark.

Total Essence

TO THE EDITORS: Just a brief note to compliment you on the succinctness and clarity with which you were able to abstract the total essence of my article on ileostomy prolapse in but a few words *(Modern Medicine,* Apr. 1, 1955, p. 103).

Modern Medicine is rightfully achieving its place among the top national journals.

IRVING L. LICHTENSTEIN, M.D.
Beverly Hills, Calif.


for patients with allergy
Lilly
QUALITY / RESEARCH / INTEGRITY

prescribe full enjoyment of springtime

'Co-Pyronil'

(PYRROBUTAMINE COMPOUND, LILLY)

The allergic patient can enjoy springtime to the fullest: 'Co-Pyronil' often eliminates distressing symptoms without causing side-effects.

Because 'Co-Pyronil' is unusually long acting, it affords the patient continuous relief without the inconvenience of frequent doses. Also, the bedtime dose keeps the patient symptom-free throughout the night.

Each pulvule provides the complementary effects of:

'Pyronil' (Pyrrobutamine, Lilly)	15 mg.
'Histadyl' (Thenylpyramine, Lilly)	25 mg.
'Clopane Hydrochloride' (Cyclopentamine Hydrochloride, Lilly)	12.5 mg.

Dose: Usually 1 or 2 pulvules every eight to twelve hours. Increase or decrease as needed.

Also: Suspension CO-PYRONIL

One-half the above formula in each 5-cc. teaspoonful. Deliciously flavored.

Pulvules CO-PYRONIL, Pediatric

Tablets PYRONIL, 15 mg.

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Questions & Answers

All questions received will be answered by letter directed to the petitioner; questions chosen for publication will appear with the physician's name deleted. Address all inquiries to the Editorial Department, MODERN MEDICINE, *84 South Tenth Street, Minneapolis 3, Minnesota.*

Endometrioma

QUESTION: **A 32-year-old woman is pregnant for the first time. After diagnosis of endometrioma, a high-estrogen regimen was instituted. This treatment never completely stopped pain nor decreased the size of the ovarian mass. What is the accepted form of treatment?**

M.D., Arkansas

ANSWER: *By Consultant in Obstetrics.* The endometrioma is probably similar to chocolate cyst of the ovary. The condition differs from general pelvic endometriosis since old blood is confined within the ovarian capsule and probably would continue to be painful. Complete relief does not result from hormone therapy, nor does the condition disappear during pregnancy as endometriosis sometimes does.

If pain and the mass persist, surgery should be done, especially if the patient is beyond the first trimester, but not so late in pregnancy that the size of the uterus would interfere with removal of the tumor. Endometrioma usually is not too difficult to remove, but the adhesions resulting from the recurrent inflammatory condition are sometimes troublesome.

in rheumatoid

more effective therapeutic agent than older corticosteroids

Three to five times as potent as oral cortisone or hydrocortisone, milligram per milligram, METICORTEN provides enhanced anti-inflammatory and antirheumatic action without the major undesirable effects associated with older corticosteroids.

Within 24 hours after administration of METICORTEN, joint pain decreases, and stiffness and local heat diminish. Improvement in functional capacity and mobility follows quickly.[1,2] Excellent results are obtained even in patients no longer responding to cortisone or hydrocortisone.[1,2]

And in intractable asthma, METICORTEN controls symptoms rapidly, markedly increases vital capacity, and permits patients to resume normal activities promptly.[3,4]

Dosage and Administration

METICORTEN is available as 5 mg. scored tablets in bottles of 30 and 100. In the treatment of rheumatoid arthritis, dosage of METICORTEN begins with an average of 20 to 30 mg. (4 to 6 tablets) a day. This is gradually reduced by 2½ to 5 mg. until maintenance dosage of 5 to 20 mg. is reached. The total 24-hour dose should be divided into four parts and administered *after meals and at bedtime*. Patients may be transferred directly from hydrocortisone or cortisone to METICORTEN without difficulty.

arthritis

"...free of significant metabolic, water or electrolyte disturbances."[1]

The higher therapeutic ratio of METICORTEN permits marked clinical benefits unaccompanied by many of the major undesirable actions characteristic of cortisone and hydrocortisone.[1-4]

METICORTEN

PREDNISONE (metacortandracin)

Schering

- avoids sodium and water retention
- avoids weight gain due to edema
- no excessive potassium depletion
- better relief of pain, swelling, tenderness; diminishes joint stiffness
- lowers sedimentation rate even where cortisone or hydrocortisone ceases to be effective—"cortisone escape"
- most effective in smallest dosage

Bibliography

(1) Dordick, J. R., and Gluck, E. J.: Preliminary clinical trials with metacortandracin in rheumatic diseases. Comparative antirheumatic potency, metabolic activity and hormonal properties, J.A.M.A., in press. (2) Bunim, J. J., Pechet, M. M., and Bollet, A. J.: J.A.M.A. *157*:311, 1955. (3) Barach, A. L.; Bickerman, H. A., and Beck, G. J.: Clinical and physiological studies on the use of metacortandracin in respiratory disease. I. Bronchial asthma, Dis. Chest, in press. (4) Schwartz, E.: Personal communication.

METICORTEN,* brand of prednisone (metacortandracin).
*T.M.

SCHERING CORPORATION · BLOOMFIELD, NEW JERSEY

Latent Syphilis

QUESTION: A pregnant woman had positive serologic reactions for syphilis, but overt signs or symptoms were absent. Penicillin, 1,000,000 units, was administered intramuscularly once daily for ten days. Serologic reactions one week later were still positive. Is further treatment required?

M.D., New Jersey

ANSWER: *By Consultant in Syphilology.* This patient has received more than an adequate amount of penicillin for therapy of latent syphilis and as a prophylaxis against transmission of syphilis to the child. A dose of 6,000,000 units administered in an eight-day period is usually sufficient for prophylaxis of congenital syphilis and for cure of latent syphilis.

The fact that the patient's serologic reactions have not become negative in a week is not surprising. Serologic titers diminish slowly after penicillin therapy and usually require several months to a year to become negative.

In those instances of late latent syphilis that have existed for more than four years since contraction, the tests may never become negative in spite of repeated or massive penicillin therapy. This, however, does not indicate that penicillin therapy is ineffective in curing the infection.

Further treatment with antibiotics is not necessary unless the serologic titers significantly increase or the patient has clinical evidence of the disease.

Product BRIEFS

℞ KAPRYLEX™

Safe, Orally Effective Antimycotic

for Diarrhea
Perianal Itching
of Intestinal Moniliasis

Usual Dose: 2-4 capsules q.i.d.

℞ CAPRYLIUM™

Moniliacidal, Trichomonacidal, Bactericidal

Rapid specific action in
Vaginitis

For Cleansing or Douche: Douche Powder (dissolved in water)
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℞ STRASCOGESIC™

Quick, High Level Analgesia
in Routine PAIN Problems

Usual Dose: 1 to 2 tablets every 3 hours

℞ SKOPOLATE™

Parasympatholytic—
Antacid—Mucigogue

in Peptic Ulcer and Functional Gastroenteralgia

Usual Dose:
2 mg. tablets—1 t.i.d. ½ hr. a.c.
P.A.M. capsules—1 t.i.d. 2 hr. p.c.
D.A. tablets—1 h.s.

℞ BIPHETACEL®

Particularly safe and effective in establishing and maintaining
Weight Reducing Habits

Usual Dose: 1 tablet t.i.d. 1 hr. a.c.

℞ MAXITATE®

WITH RAUWOLFIA COMPOUND

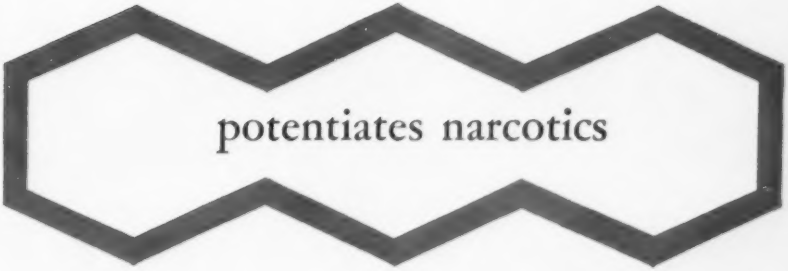
Hypotensive
Tranquilizing
Protective
in mild to severe
Hypertension

Usual Dose: 1 tablet q.i.d.

Strasenburgh
FOUNDED 1886
LABORATORIES
R. J. Strasenburgh Co., Rochester, N. Y., U. S. A.
Write for literature

"Somebody let it slip that he was a doctor."

THORAZINE*



for relief of intractable pain

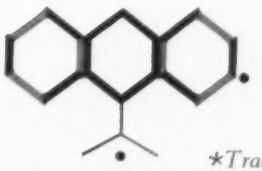
In cases of intractable pain 'Thorazine' "significantly reduces the patient's requirement for narcotics and provides equal or better analgesia than high dosages of narcotics alone".

Sadove et al.: J.A.M.A. 155:626 (June 12) 1954

'Thorazine' Hydrochloride is available in 10 mg., 25 mg., 50 mg. and 100 mg. tablets; 25 mg. (1 cc.) ampuls and 50 mg. (2 cc.) ampuls; and syrup (10 mg./5 cc.). Information available on request.

Smith, Kline & French Laboratories

1530 Spring Garden Street, Philadelphia 1



**Trademark for S.K.F.'s brand of chlorpromazine. Chemically it is 10-(3-dimethylaminopropyl)-2-chlorphenothiazine.*

These patients must conquer "diet fear"

Very few patients, particularly the obese, are able to diet successfully because they fear that the road they must travel to lose weight is an uphill struggle. Obocell eliminates "diet fear."

Obocell makes dieting easy because it curbs the appetite and suppresses "between-meal hunger." Nicel* and d-Amphetamine in Obocell work together to provide quick and sustained control of both hunger and appetite.

Obocell®

doubles the power to resist food

Each Obocell tablet supplies:
d-Amphetamine Phosphate (dibasic) .....5 mg.
Nicel*.....160 mg.
*Irwin-Neisler's brand of specially prepared high viscosity methylcellulose.
Bottles of 100, 500, 1000.

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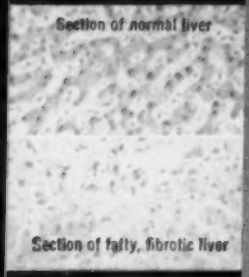
in the dangerously overweight...

protect the liver too!

Grossly obese patients and those with a history of long-standing obesity invariably suffer from impairment of liver function.[1]

Obocell Complex does more than help the patient lose weight...It supplies the needed protection for the liver, plus essential vitamins to support an overtaxed enzyme system in these special obese patients.

1. Zelman, S.: Arch. Int. Med. 90: 141, 1952.



1 capsule with a full glass of water an hour before meals. If additional appetite suppressing effect is needed, increase the morning and noon doses.

Each Obocell Complex capsule supplies:

d-Amphetamine Phosphate (dibasic)	5 mg.
Nicel*	100 mg.
Choline Bitartrate	200 mg.
Inositol	50 mg.
Thiamine Mononitrate	0.8 mg.
Riboflavin	1.2 mg.
Niacinamide	8 mg.

*Irwin-Neisler's brand of specially prepared high viscosity methylcellulose.

Bottles of 50 and 500.

Obocell Complex

triple protection for the heavily obese patient

Irwin, Neisler & Company • Decatur, Illinois • Toronto 1, Ontario

Forensic Medicine

ARTHUR L. H. STREET, LL.B.

Prepared especially for Modern Medicine

Compensation—*Double Claim*

PROBLEM: A workmen's compensation claimant dropped a heavy object on his right foot, causing arteriolar necrosis of the vessels of the big toe. Surgery was performed because blood supply in his leg was restricted and gangrene occurred. Was the operation compensable separately so the worker could receive an award for temporary total incapacity as well as for permanent partial loss of the use of the leg?

COURT'S ANSWER: *Yes.*

So decided the Texas Court of Civil Appeals, Galveston (272 S.W. 2d 569).

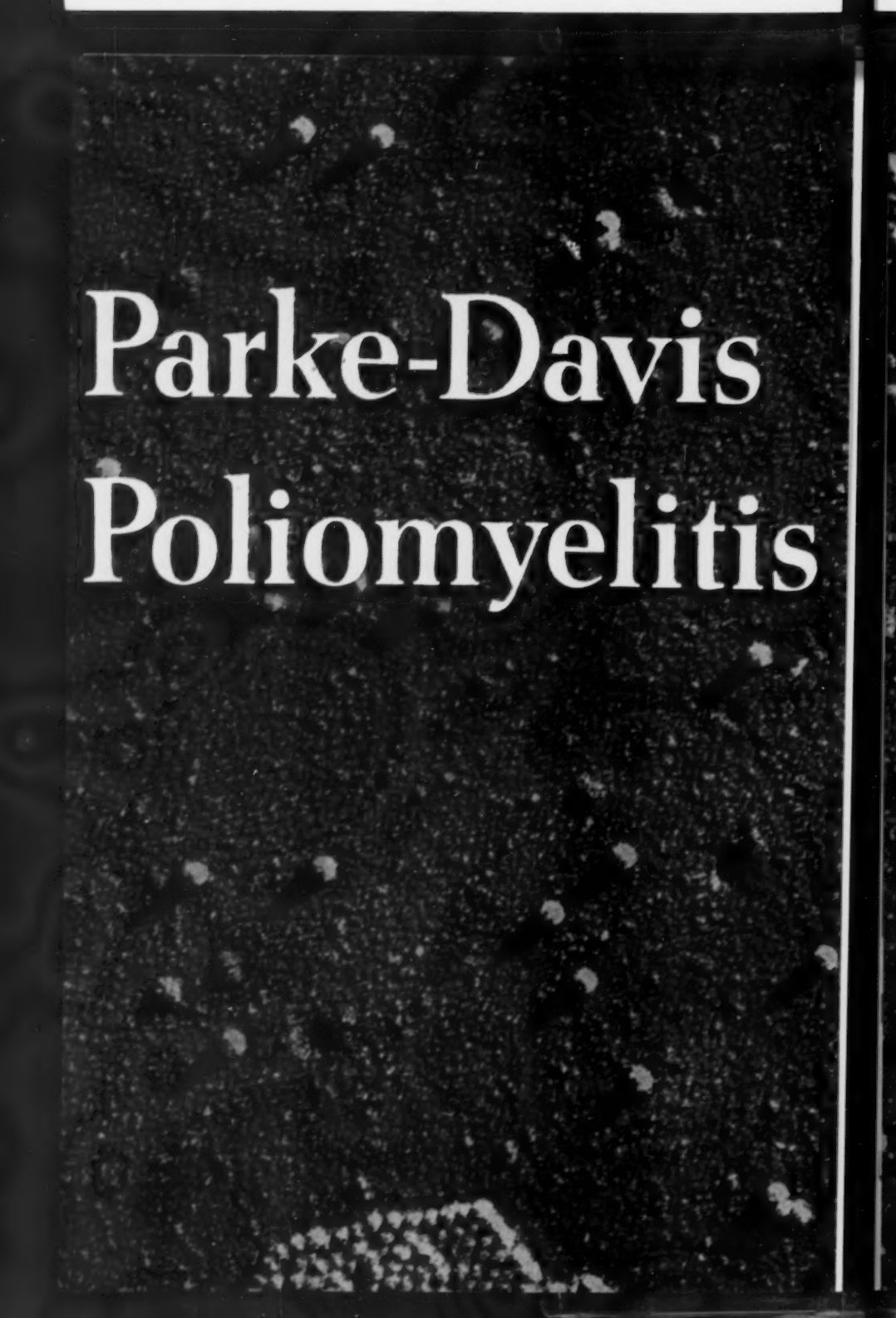
Witnesses—*Experts' Fees*

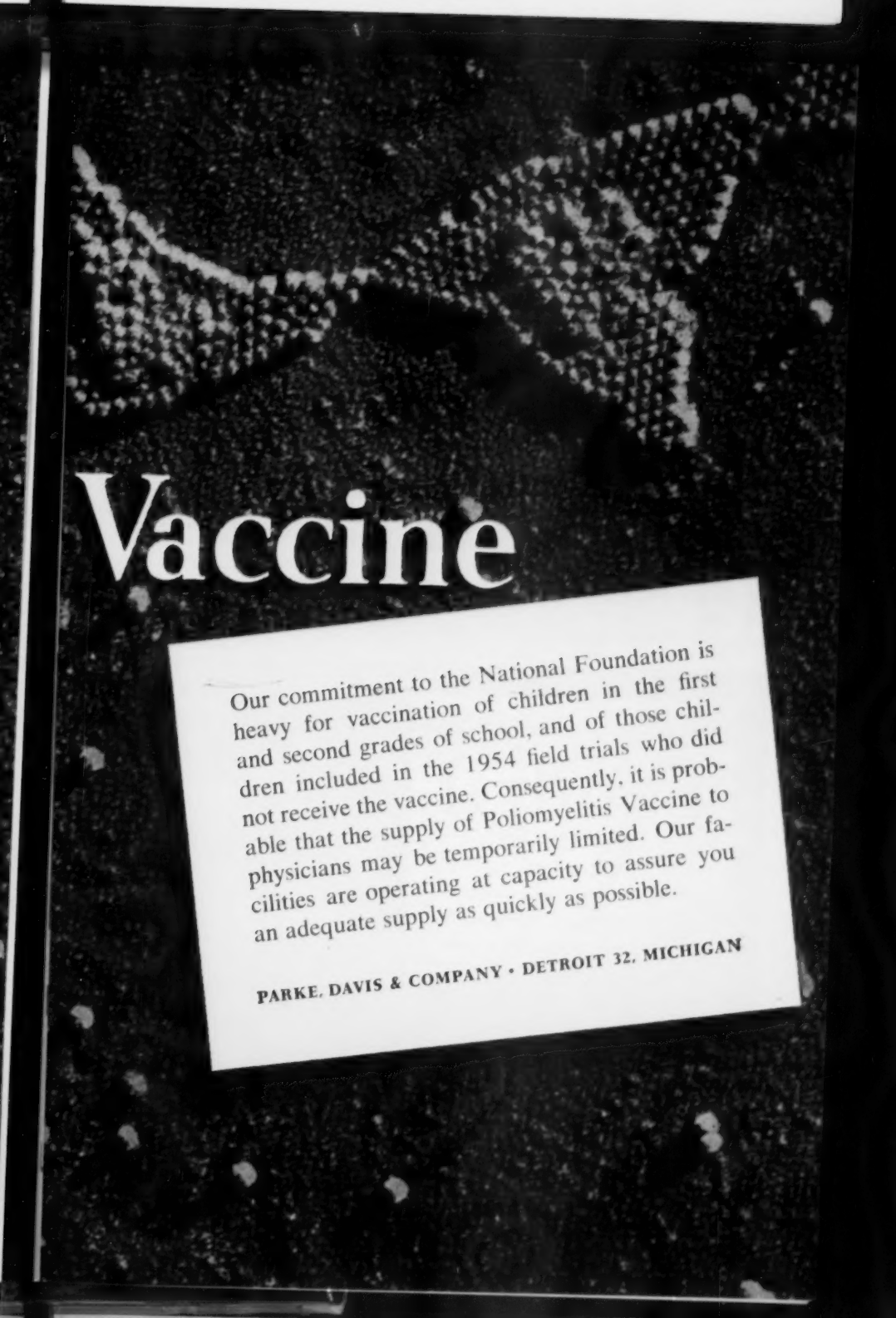
PROBLEM: In a damage suit in Louisiana for unjustified shooting, was plaintiff entitled to include in court costs a $100 fee for his medical expert witness? The doctor had reviewed plaintiff's hospital record, examined roentgenograms, and testified to the nature of the injuries.

COURT'S ANSWER: *Yes.*

So decided the Louisiana Court of Appeals, New Orleans (77 So. 2d 228).

¶ Some trial courts can fix expert fee allowances, but statutes of other states limit fees to a maximum allowance per day.—A.L.H.S.


Parke-Davis
Poliomyelitis


Vaccine
Our commitment to the National Foundation is heavy for vaccination of children in the first and second grades of school, and of those children included in the 1954 field trials who did not receive the vaccine. Consequently, it is probable that the supply of Poliomyelitis Vaccine to physicians may be temporarily limited. Our facilities are operating at capacity to assure you an adequate supply as quickly as possible.
PARKE, DAVIS & COMPANY • DETROIT 32, MICHIGAN

Narcotics—*Induced Addiction*

PROBLEM: Were damages properly awarded against a doctor when a patient became a drug addict under the following circumstances? The patient was hospitalized for six months for dilatation, curettage, separation of adhesions, supravaginal hysterectomy, and abdominal obstructions. Defendant attended her much of the time and operated once. The patient received narcotics from other doctors but principally from defendant during the crucial period. For three months, the defendant attended her only two or three times but issued prescriptions by phone for morphine. Another doctor discovered her addiction and assisted her in withdrawing from it.

COURT'S ANSWER: *Yes.*

The New Mexico Supreme Court was influenced by the testimony of 2 medical experts, who said that the quantity of drugs prescribed by defendant sufficed to cause addiction, though specialists in drug addiction reported to the contrary.

The court also said that damages should not be denied on a theory that the patient's negligence contributed to the addiction, since the doctor's acts were the primary cause (275 Pac. 2d 175).

Autopsies—*Liability*

PROBLEM: Was an insurance company liable in damages to a widow because its physicians retained vital organs of her husband's body after autopsy beyond a reasonable time, although she had assented to the removal?

COURT'S ANSWER: *Yes.*

So decided a federal district judge in California (3 Fed. Supp. 358).

When Rectal Surgery is Contraindicated

prescribe...

RECTAL MEDICONE

relieves painful anal lesions — ulcers abrasions — thrombosed hemorrhoids

■ In serious rectal involvement—where severe pain and discomfort are the patient's chief complaint[1] – the insertion of Rectal Medicone affords dramatic relief, thus enabling the clinician to proceed with therapeutic measures for treatment of the basic condition.

millions prescribed yearly...

[1]*Bargen, J. A., and Jackman, R. J., Journal Lancet, 72:11, Nov., 1952.*

MEDICONE COMPANY • 225 VARICK STREET • NEW YORK 14, N.Y.

Malpractice—*Company Doctors*

PROBLEM: A doctor who examined applicants for employment at an industrial plant negligently injured a woman while drawing blood from her arm. Was the company liable on a theory that the doctor was employed and not an independent contractor?

COURT'S ANSWER: *Yes.*

So decided the New York Court of Appeals (308 N.Y. 116, 123 N.E. 2d 801).

Partnership—*Dissolution*

PROBLEM: Dr. W sued to dissolve a partnership with Dr. S, claiming that his colleague had become physically disabled. Dr. S counterclaimed that Dr. W's conduct amounted to a withdrawal from the firm and, therefore, he could not engage in practice within 50 miles for five years, as the contract provided. Since neither doctor proved his claim, did the trial judge properly order dissolution of the firm and equal division of the assets, allowing Dr. W to reengage in practice locally?

COURT'S ANSWER: *Yes.*

So decided the Kentucky Court of Appeals (272 S.W. 2d 653).

Wills—*Admissible Testimony*

PROBLEM: In a will contest, did the court properly refuse to permit a physician who had attended testatrix to testify to mental and physical conditions that would show that she was not mentally competent to make a valid will?

COURT'S ANSWER: *Yes.*

However, the New York Court of Appeals said that the physician could report facts not obtained in a professional capacity to which a lay witness could properly testify on the basis of observation (307 N.Y. 181, 120 N.E. 2d 777).

NEW DRUG

Meratran

(pipradrol hydrochloride)

a unique central motivant for the treatment of the emotionally tired and depressed patient

subtly returns your emotionally fatigued and depressed patients to their usual level of alertness, interest and productivity...

Meratran is chemically new and clinically different. It acts upon the subcortical area of the brain. In doses easily adjusted to patient needs its onset of action is subtle -- comfortable -- prompt. Its effectiveness is prolonged.[1-3]

- no appreciable effect on blood pressure and respiration
- restores needed sense of well being
- no tolerance or drug habituation
- normal appetite undisturbed
- no jitters - no apprehension
- little or no insomnia
- wide range of safety
- no rebound letdown

an exclusive product of Merrell Since 1828 research

FOR VARICOSE VEINS
FROM BAUER & BLACK

AN **ELASTIC STOCKING** THAT DOESN'T LOOK LIKE ONE

So sheer, your patients will wear it cheerfully—yet it gives correct, graduated support from ankle to thigh

Now you can prescribe elastic stockings that are truly sheer and inconspicuous. So sheer and dressy-looking, in fact, your patients can wear them without overhose. (No patient co-operation problem with *these* stockings.)

Yet sheer as they are, Bauer & Black elastic stockings give proper remedial support. They're knitted with rear-fashioning seam so that pressure is adjusted to leg contours, avoiding undesirable constriction. Pressure decreases gradually from ankle up, gently speeding venous flow.

Shouldn't you prescribe *Bauer & Black* elastic stockings next time? More doctors *do*.

Shaded area indicates correct pressure pattern of Bauer & Black Elastic Stocking.

BAUER & BLACK
ELASTIC STOCKINGS

Division of The Kendall Company
309 West Jackson Blvd., Chicago 6, Ill.

for patients with painful "creaky" joints

Pabirin . . . safest of the antirheumatic salicylate-paba combinations

For these reasons: Salicylism does not occur, even with heavy daily requirements. *Low* dosage levels produce *high* blood levels. Acetylsalicylic acid, the most effective of the salicylates, is well-tolerated. Pabirin is sodium-*and* potassium-free. It offsets salicylate depletion of vitamin C by providing a therapeutic amount of 300 mg. in the average daily dose of six capsules. And highly effective . . . High blood levels are promptly reached and sustained due to the mutually potentiating action of acetylsalicylic acid and PABA plus the retarding effect of PABA on salicylate excretion. The rapidly disintegrating capsules provide for fast absorption and prompt relief of pain.

Pabirin is a DORSEY preparation.

Each capsule contains:
Acetylsalicylic acid ..... 5 gr.
Para-aminobenzoic acid ..... 5 gr.
Ascorbic acid ..... 50 mg.
Average dose: 2 to 3 capsules 3 or 4 times daily.
Supplied: In bottles of 100, 500 and 1,000 capsules.

Pabirin®

Smith-Dorsey • Lincoln, Nebraska • A Division of The Wander Company

Life Insurance—*Validity*

PROBLEM: Insured died of cancer a few months after the policies were issued. He had not known that he had cancer and did not state in the application that he had small, firm nodules in his abdomen. Insurer's physician examined him and found him to be in good health. The policies stated that they would not be effective if the insured was not in good health when they were issued. Were the policies void?

COURT'S ANSWER: *No.*

The California District Court of Appeals, Second District, said that the insurance was valid if insured was apparently in good health and did not deliberately misrepresent his physical condition. The decision agrees with the majority judicial view, though judges of courts in Massachusetts and several other states have decided that policies issued under similar circumstances were not effective (278 Pac. 2d 966).

Partnership—*Members' Rights*

PROBLEM: Contract between a medical partnership and a hospital insurance corporation provided for compulsory arbitration of disputes. Could 1 member of the partnership compel arbitration?

COURT'S ANSWER: *No.*

The decision by the Supreme Court, Kings County, N.Y., illustrates that a right of a partnership ordinarily cannot be enforced by 1 of the members (136 N. Y. Supp. 2d 443).

bring him

back to normal...

Pediatric

Erythrocin® STEARATE

(Erythromycin Stearate, Abbott)

ORAL SUSPENSION

Specific therapy against the Cocci

because, as you know, most bacterial respiratory infections are caused by staph-, strep- or pneumococci. *And these are the very organisms most sensitive to Pediatric* ERYTHROCIN.

Without the risk of side effects

because *Pediatric* ERYTHROCIN destroys only the harmful coccic invaders, yet doesn't disturb the normal flora. *Thus, your patients rarely get side effects.* No allergies, either.

In a taste-appealing spoonful

because *Pediatric* ERYTHROCIN combines a tantalizing, cinnamon aroma and a candy-like taste that youngsters will take—and like.

comes in 2-fl.oz. bottles. Abbott

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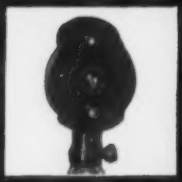
Molded, black, lustrous nylon case. Built to withstand rugged wear . . . impact and chemical resistant. Case has plated trim and washable soft, rubber cushioning liner.

for *Lifetime Satisfaction*

NATIONAL offers a distinctively fine combination diagnostic set. Instruments, handle, specula, case . . . all are notable for highest standards in support of a *Lifetime Instrument Guarantee.*



OPHTHALMOSCOPE #40

Wafer-thin metal head is light and handles with exceptional ease. You can set dioptre disc, aperture selector and light intensity with one finger. Has May system, brilliant light beam . . . built-in fixed focus double condensing lens, magnified illuminated numerals. Durably finished in non-glare black.

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Head has especially low-slung lighting for fullest, unobstructed, two-times magnified vision; maximum operational area and bright, shadow-free illumination at distal end of speculum. Head fits all NATIONAL handles; can be purchased separately.

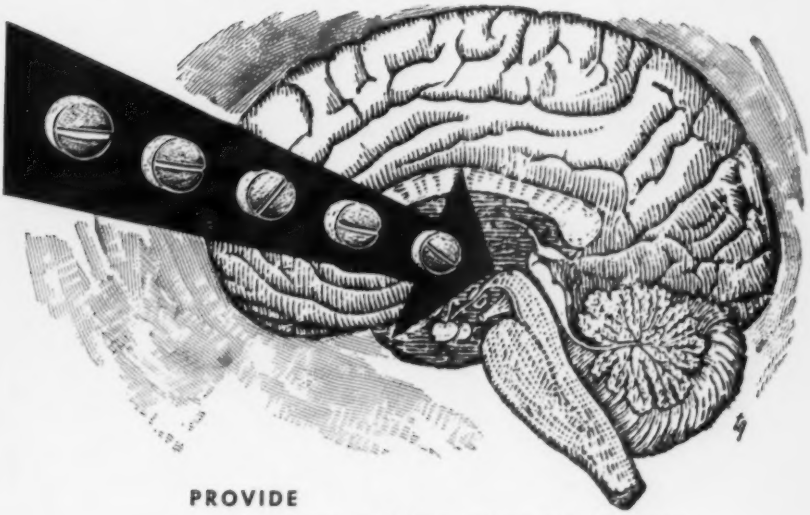
National

ASK YOUR DEALER TO SHOW YOU NATIONAL'S #2140CN

NATIONAL ELECTRIC INSTRUMENT CO., INC.

ELMHURST 73, NEW YORK

SECODRIN TABLETS



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Symptomatic relief from Psychosomatic disturbances

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Anxiety, abnormal dread or fear, discouragement, gloom, depression, nervousness

ALLAY

Sensation of hunger, thereby lessening tendency to overeating

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Sense of well-being without untoward after-effects

Each Secodrin tablet contains: secobarbital 30 mg.
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Physicians' sample of this new PREMO specialty.

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Please send me a professional sample of 30 Secodrin tablets.

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new NEOBON's* 4 factors, plus 1

(for those over 41)

* Gonadal Hormone Replacement
  (balanced combination of ethinyl estradiol and methyl testosterone)
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Literature? Write... ROERIG Chicago 11, Illinois

Laxative action... *suited to her routine*

Relief of temporary constipation: Agoral is suited to the acutely constipated patient who can neither take time off for a "purge," nor time-out to answer the sudden urge induced by strong laxatives: the head of a one-man business; the executive committed to a day of important conferences; the bus driver on a long haul; people in the theatre, the pulpit, the factory, the home. For all who need relief of temporary acute constipation, pleasant tasting Agoral provides positive results without urgency.

No urgency; evacuation which adjusts to schedule: A dose taken at bedtime almost invariably produces results the following day. Elimination is comfortably achieved by mild, positive peristaltic action, not by violent paroxysms of unrestrained hyper peristaltis.

No griping; interim discomfort avoided: Agoral's action is sustained uniformly during its passage through the intestinal tract; and it causes no uncomfortable griping, embarrassing flatulence, distention or stomach distress.

Dosage: On retiring, ½ to 1 tablespoonful taken in milk, water, juice or miscible food. Repeat if needed the following morning two hours after eating. Contraindications: symptoms of appendicitis; idiosyncrasy to phenolphthalein.

Supplied: bottles of 6, 10 and 16 fluid-ounces; and as Agoral Plain (without phenolphthalein), bottles of 6 and 16 fluid-ounces.

Agoral®

mineral oil emulsion with phenolphthalein

WARNER-CHILCOTT

Washington LETTER

The Washington Rush To Board the Salk Bandwagon

WASHINGTON has a way of making things seem what they are not. This is well illustrated by the speech-making, conference-calling, and bill-introducing that followed announcement of the success of the Salk poliomyelitis vaccine.

The facts are, as all physicians know, that Dr. Jonas Salk was on the University of Michigan medical faculty when he developed the vaccine to its highly successful stage. He was not on the federal government's payroll. The National Foundation for Infantile Paralysis, a private, voluntary, and nonfederal organization, invested heavily to subsidize Dr. Salk. If there was any lesson in the discovery, it was that the private, voluntary contributions of millions of people sometimes serve a worthy cause—and that not all the best researchers are working for the federal government.

"I'll see your tonsillectomy and raise you one appendectomy."

Yet, word had hardly reached here from Ann Arbor that the vaccine would effectively control poliomyelitis than official Washington stopped all its other work and scrambled to get aboard the Salk bandwagon. There were no party lines on this; it was every man for himself.

Apparently lost sight of was the fact that the medical profession, the state public health departments, the pharmaceutical industry, and the retail druggists had a distribution plan well worked out by the time the official pronouncement was made of the vaccine's success. And, after the last band had stopped playing and the last orator had been heard, it was this plan that was put into operation.

Here is a partial chronology of Washington's contribution to the vaccine:

• The morning after the announcement, Sen. Lister Hill (D., Ala.), chairman of the Labor and Welfare Committee, called for a White House conference to get the situation under control. This was the first suggestion that things were out

Gantrisin / 'Roche' a single, soluble, wide-spectrum sulfonamide
tablets, pediatric suspension, syrup, ampuls, ophthalmic solution and ointment.

Pneumonia*

℞ Gantrisin tabs. 0.5 Gm
#60
S. 8 tabs. initially; then
4 tabs. q. 6 h., p.r.n.

Meningitis*

℞ Inject i.v. 10 cc (4 Gm)
Gantrisin Diethanolamine q. 8 h.;
then shift to oral medication
with 4 tabs. (2 Gm) q. 6 h.

Tonsillitis* in child weighing 40 lbs.

℞ Gantrisin (acetyl) Pediatric
Suspension ℥ iv
S. Initial dose 2 teasp.; then
1 teasp. q. 6 h.

Urinary infections*

℞ Gantrisin tabs. 0.5 Gm

#100

S. 8 tabs. initially; then 4 tabs. q. 6 h., p.r.n.

Cystitis* in child weighing 40 lbs.

℞ Gantrisin (acetyl) Syrup ℥ iv

S. Initial dose 2 teasp.; then 1 teasp. q. 6 h.

Blepharitis*

℞ Gantrisin Diethanolamine Ophthalmic Ointment 4%, 1/8 oz

S. Use in eye 3 times a day and at bedtime

* ... when due to streptococci, staphylococci, meningococci, H. influenzae, K. pneumoniae, E. coli, B. proteus, B. pyocyaneus (Pseudomonas aeruginosa), A. aerogenes, paracolon or alcaligenes fecalis. As is true of all antibacterial agents, there may be failures due to resistant strains.

Gantrisin ® - brand of sulfisoxazole (3,4-dimethyl-5-sulfanilamido-isoxazole)

of control. Chairman Priest of the companion House committee on Interstate and Foreign Commerce said he saw no need for this sort of action.

• The President, in the interest of protecting the rights of every susceptible child to his share of the vaccine, ordered Secretary Hobby to make a survey of the problem.

• Mrs. Hobby, who earlier had indicated that she saw no problem, called a conference to be held the next week in her department. Invited were members of 25 medical, pharmaceutical, and public health organizations.

• The conference met and finished its work in one day. The medical team—representatives of private physicians and of public health departments—outlined what it already was proceeding to do. The supply sources—drug houses and drugstores—reported on how fast the vaccine could be produced and on what method would be employed to check on the purchasers, physicians, and public health departments.

• Out of all this came a national committee, empowered with little but the ability to observe, advise, and keep books on allocations.

• Senators and representatives, who had started introducing special bills right after hearing of the Ann Arbor announcement, continued dropping the measures into the hoppers long after it was apparent that no new laws were needed. Of the bills, 3 or 4 would make the federal gov-

(Continued on page 68)

NEW—for weight gain—
high-calorie food supplement

MorCal*

TRADEMARK

with B_1 and B_{12}

won't be just "tolerated" by your underweights...they'll love it!

adds variety, doesn't satiate

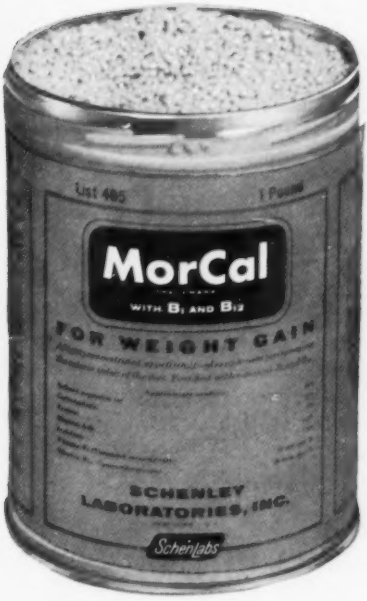
MorCal provides a new, pleasant way to add taste-tempting variety to the weight-gain diet. It's delicious "as is," or topped with fruit and milk for breakfast or between-meal snacks. Cereal-like MorCal can be added to or mixed with almost any food on your patients' menus. This new fat preparation doesn't satiate, leaves no cloying aftertaste.

easy to use in cooking or baking

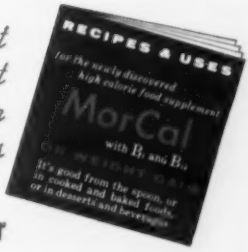
MorCal can be used as a substitute for most of the flour in cooking and baking, often increasing calorie content 30 to 100 per cent. It adds flavor as well as calories to desserts, soups, gravies, sauces, etc.

prescribe MorCal

for overactive, fast-growing youngsters, underweight adults, convalescents, the chronically ill, and elderly patients. Just two rounded tablespoonfuls four times daily (120 grams) add 720 extra calories to the diet—plus 12½ times the minimum daily requirement of vitamin B_1 and 6½ times the suggested daily supplement of vitamin B_{12}.



Request booklet for patients



Special MorCal recipe booklet

shows your patients many taste-tempting ways to add calories and variety to their weight-gain diet. Prepared by our home economics consultant, this "Recipes and Uses" booklet is enclosed above the inner seal of each one-pound tin of MorCal. A supply of these recipe booklets is yours for the asking—just let us know how many you require to give to your patients.

MorCal contains refined vegetable fat 44%, carbohydrate 42%, protein 9%, mineral ash 2.5%, moisture 2.5%, vitamin B_1 (thiamine mononitrate) 50 mg. per lb., and vitamin B_{12} (cyanocobalamine) 50 mcg. per lb. MorCal is prepared from hydrogenated cottonseed oil, proteins and carbohydrates from dried skim milk solids and wheat flour, natural flavorings, synthetic vitamins B_1 and B_{12}.

*MORCAL IS SCHENLEY LABORATORIES' TRADEMARK FOR A HIGH-CALORIE FOOD SUPPLEMENT. PATENT PENDING. 21455

SchenLabs SCHENLEY LABORATORIES, INC., NEW YORK 1, NEW YORK

ernment the distributing authority. Their sponsors' enthusiasm did not recede even when Surg. Gen. Scheele said the federal government would be unable to set up mandatory controls in time to do any good. A score of bills would honor Dr. Salk; one would give him $10,000 a year for life, another would have the government strike a new dime in his honor.

• Dr. Salk was called to the White House, warmly congratulated by the President, and told he would be the first recipient of a new citizens medal—perhaps the only official Washington development with which the whole country was in hearty accord.

• Not all of the associations that wanted to take part in the first conference could be accommodated; participation had been limited to the groups that actually would be responsible for manufacturing, distributing, and administering the vaccine. But these other groups—ranging from the Girls Scouts to the Advertising Council—had their own conference. More than two weeks after the Ann Arbor announcement, this second conference was held. Here the groups that were interested in vaccine but would not be involved in handling it in any way were invited to Mrs. Hobby's department. There they were told what had been decided at the first meeting—decisions that, incidentally, already had been widely publicized in all the media of public information.

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PROMPT RELIEF

and

PROLONGED EFFECT

in

BRONCHIAL ASTHMA

SUS-PHRINE

AQUEOUS EPINEPHRINE SUSPENSION 1-200

Brewer

for subcutaneous injection

supplied in

5 cc. VIAL

Increasingly favored as evidenced in—

RECENT CLINICAL REPORTS

During the past few years we have had considerable experience with, and have been favorably impressed by, the action of an aqueous suspension of epinephrine, **Sus-Phrine 1:200 (Brewer).** This material has a decided advantage over epinephrine suspended in oil. There is no difficulty with this material in obtaining an even suspension with a few shakes of the ampule even if it has been standing for a considerable time. The aqueous suspension flows freely through an ordinary hypodermic needle. Another advantage is that 20 per cent of the amount injected is available for immediate bronchodilator effect. The balance is gradually liberated for sustained action. We have given doses of 0.1 to 0.25 cc. (1½ to 4 minims) to children, with excellent immediate as well as prolonged effect.

Levin, S. J. Ped. Cl. of N. A. 1:975,1954.

Epinephrine suspended in oil has the disadvantages that because of delayed action it cannot be used when prompt effect is desired as in acute asthmatic attack, and it must be given intramuscularly making self-administration difficult. Aqueous suspensions have a prompt, as well as a prolonged action, and may be self-administered subcutaneously as readily as epinephrine hydrochloride solution.

Naterman, H. L. The Journ. of Allergy. 24:60,1953.

. . . in 173 patients . . . all but three stated emphatically that they prefer the new product **(Sus-Phrine)** to epinephrine in oil . . . Greatest individual acceptances of the new injection has been by children.

Unger, A. H. and Unger, L. Annals of Allergy. 10:128,1952.

Brewer
EST. 1852

For complete reprints of above and sample, send your Rx blank marked 10-SP-5

BREWER & COMPANY, INC. WORCESTER 8, MASSACHUSETTS U.S.A.

• Long after most of the furor had subsided, Sen. Hill was still at it. Before the Hill subcommittee, Sen. Hill three times asked Surg. Gen. Scheele if PHS was not in need of more money to assure proper distribution. Three times Dr. Scheele replied that he thought that the present voluntary system was the best one.

Meanwhile, fortunately, the pharmaceutical houses continued to produce and distribute the vaccine at top speed under the prearranged control system, and the public health departments and private physicians went on inoculating youngsters just the way they had planned and just as though Washington did not exist, a triumph of private enterprise serving the public interest.

Washington Notes

¶ Legislation for an intensive survey of the nation's mental health problems is moving ahead rapidly, well in advance of all other major health bills. Less than two weeks after it was reported out of the House Committee, the companion measure had cleared the Senate committee. Enactment is almost assured.

¶ Interest is building up in a plan for the federal government to reimburse states for 50% of the cost of domiciliary buildings constructed as a part of soldiers' homes. It would be a five-year program, with $5 million available each year. The theory is that veterans are a national and not a state responsibility and that soldiers' homes are becoming burdens on the states.

ACHRO

in Lederle's

Each capsule contains:

ACHROMYCIN Tetracycline Lederle	250 mg.
Ascorbic Acid U.S.P.	75 mg.
Thiamine Mononitrate	2.5 mg.
Riboflavin	2.5 mg.
Niacinamide	25 mg.
Pyridoxine HCl	0.5 mg.
Calcium Pantothenate	5 mg.
Vitamin B_{12}	1 mcg.
Folic Acid	0.375 mg.
Vitamin K Menadione	0.5 mg.

Also available: ACHROMYCIN SF Oral Suspension

NOW AVAILABLE! ACHROMYCIN with STRESS FORMULA VITAMINS

MYCIN* SF

TETRACYCLINE

EXCLUSIVE, DRY-FILLED sealed capsules

New ACHROMYCIN SF combines today's foremost broad-spectrum antibiotic with the stress vitamin formula suggested by the National Research Council. It provides, in a single dose, potent anti-infective action plus nutritional supplementation to hasten recovery and convalescence.

MORE EFFECTIVE. Recently completed clinical trials show that powder-filled ACHROMYCIN SF Capsules are more rapidly and completely absorbed. They contain no oils or paste.

When you want antibiotic therapy fortified with stress formula vitamins for patients with prolonged illness, prescribe ACHROMYCIN SF for prompt control of infection and maximum patient comfort.

LEDERLE LABORATORIES DIVISION *American Cyanamid Company* PEARL RIVER, N. Y. Lederle

*REG. U. S. PAT. OFF.

"They seemed rather callous, but I guess it's just because they see so many emergencies."

Which glove works best in surgery?

Please pardon us if we seem facetious, but a surgical glove seems a good illustration of the importance of appropriate design in the manufacture of accessories. Without this glove surgery wouldn't be safe. And only when it serves as intended, by such as permitting complete finger freedom and sensitivity, is it of any value. When so designed it has no equal for its purpose.

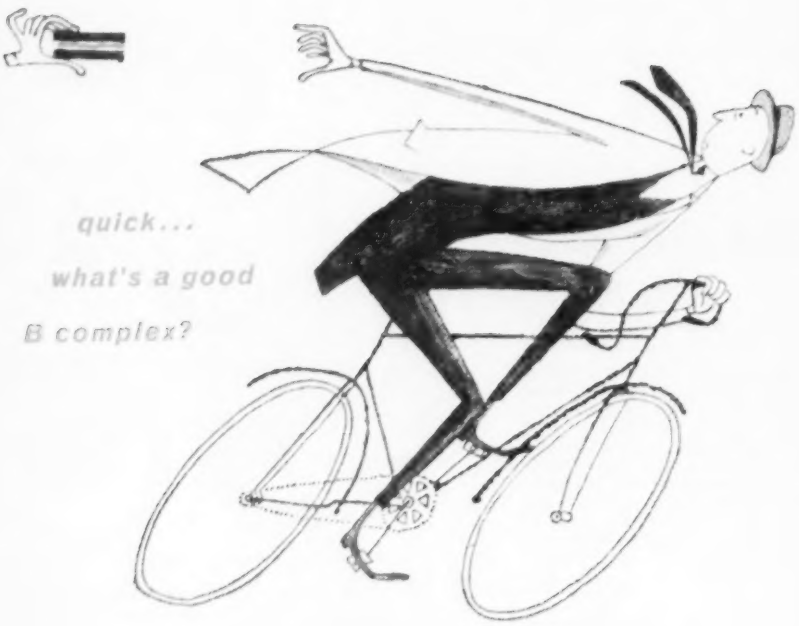
And so it is with accessories of other kinds. Those for example you need to run your electrocardiograph. The accuracy and usefulness of such a precision instrument is in direct ratio to the effectiveness of its parts *and accessories*. Of what value is the high deflection speed and top performance of an ECG if the recording paper cannot successfully show it in clear, sharp and distinct registrations? Of what value is an electrode paste which does not reduce patient resistance at electrode connections to a level suitable for modern cardiography?

An accessory designed by the maker of an instrument should receive the same care, study and research as any of the important parts or components of that instrument. This is true in regard to the Viso-Cardiette. Much of the Sanborn Viso-Cardiette's fame as a direct-writing cardiograph can be attributed to the continuous, painstaking research on the two accessories which were *originally designed* by Sanborn Company, and which are so necessary to the Viso's accuracy — Permapaper (inkless recording paper) and Redux (electrode paste).

Permapaper and Redux are major examples of Sanborn accessories that receive diligent surveillance as to the service they are performing — one more part of the Sanborn policy of *complete* service to the ECG user.

SANBORN COMPANY

195 Massachusetts Ave. Cambridge 39, Mass.



sur-Bex® with C

(ABBOTT'S B-COMPLEX TABLETS WITH C)

Each SUR-BEX with C tablet supplies:

Thiamine Mononitrate	6 mg.
Riboflavin	6 mg.
Nicotinamide	30 mg.
Pyridoxine Hydrochloride	1 mg.
Vitamin B_{12} (as vitamin B_{12} concentrate)	2 mcg.
Pantothenic Acid (as calcium pantothenate)	10 mg.
Ascorbic Acid	150 mg.
Liver Fraction 2, N.F.	300 mg.
Brewer's Yeast, Dried	150 mg.

Abbott

As a dietary supplement: 1 or 2 tablets daily.

For stress, or postoperative convalescence: 2 or more tablets daily.

505144

How to "sweeten" a patient's temper!

Watch patients smile when told they can have *lots* of D-Zerta Gelatin! Sweet dessert that's sugar-free . . . it's made with saccharin. D-Zerta's carbohydrate-free, too. Only 12 calories a serving!

D-Zerta comes in the famous Jell-O flavors . . . strawberry, raspberry, cherry, orange, lemon and lime! D-Zerta's so easy to make; costs only about 4¢ a serving, too! D-Zerta is found in the dietetic food sections of food stores.

D-ZERTA the sweet dessert that's sugar-free

Made by the makers of Jell-O desserts for those who must watch their sugar intake

Jell-O and D-Zerta are registered trade-marks of General Foods Corporation

PEDIATRICS BULLETIN

Prepared In The Interests Of The Profession By The Pediatrics Consultant Staff Of H. J. Heinz Company

MEATAL STRICTURE
OF THE URETHRA IN INFANTS

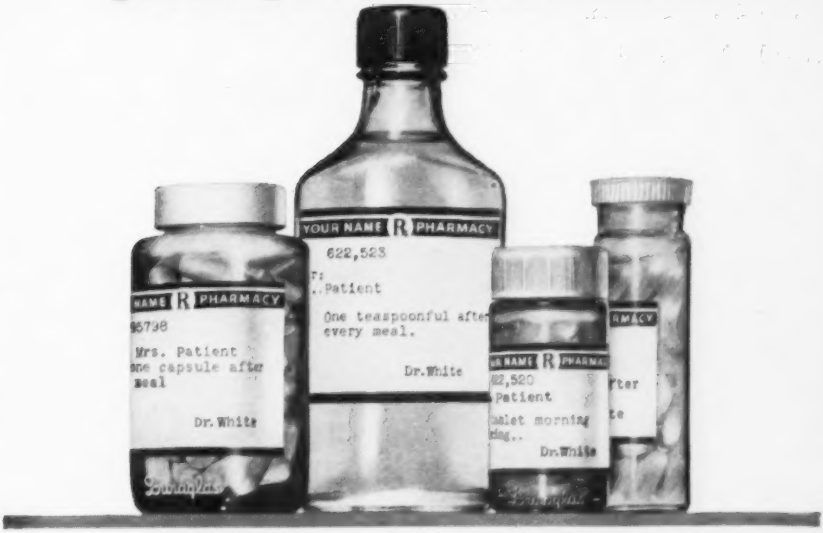
Circumcision of newborn babies is now, of course, routine in many hospitals, regardless of the religion of the parents. Justifiable as the procedure may be, it still carries its risks and complications.

• **The occurrence** of parameatal ulceration, with resulting scarring and contractures, may sometimes cause urinary obstruction and necessitate meatotomy. Unprotected by the foreskin, the sensitive skin of the glans (particularly the parameatal area, which remains wet longest) becomes easily excoriated by rough diapers, particularly when they have first been wetted and allowed to dry before changing. An original slight irritation leaves the skin more susceptible to further trauma and a small area begins to ooze serum. A scab forms which itself may repeatedly be torn off by sticking to the diapers. Finally, a chronic ulcer results, with scarring which may cause serious narrowing of the meatal opening.

• **Fortunately,** this condition can always be prevented if detected and treated early. At the first sign of such irritation of the parameatal area, the mother should be instructed to use softer diapers with more frequent changes, or to omit diapers, and to use protecting ointments until the lesion heals.

NOTE: These bulletins are designed to help disseminate modern pediatrics knowledge to the general medical profession and appear periodically in Modern Medicine.

How many of your patients think prescriptions cost too much?



A recent survey has revealed that 63% of your patients believe the prices they pay for medication are too high. This attitude is undoubtedly due to lack of understanding regarding research and manufacturing costs of medicine.

Modern medication is not overpriced

In handing a prescription to a patient many physicians correct this misunderstanding by explaining the cost, effect and economy of the prescription. For example: "This prescription may seem to cost considerable. It may cost $10 to $15. However, when you stop to consider its effectiveness, it is relatively inexpensive. In some instances this prescription eliminates a trip to the hospital."

PRESCRIPTION CONTAINERS
AN (O) PRODUCT

OWENS-ILLINOIS
GENERAL OFFICES · TOLEDO 1, OHIO

better and more rapidly absorbed and utilized, better tolerated . . .

clinical evidence establishes (as shown in chart below) that aqueous vitamin A, as available in Aquasol A Capsules, provides . . .

up to 300% greater absorption

100% higher liver storage

67% less loss through fecal excretion

only **1/2** to **1/10** as much aqueous vitamin A is needed

	aqueous vitamin A**	ordinary oily vitamin A
acne	25,000 to 50,000 units daily	up to 500,000 units daily
eczema chronic	25,000 to 50,000 units daily	50,000 to 500,000 units daily
excessively dry skin	60,000 to 100,000 units daily	100,000 to 300,000 units daily

**Aquasol A Capsules (aqueous natural vitamin A) was one of the products used in these studies.

only **1/2** to **1/3** the treatment time is required for aqueous vitamin A

aquasol A capsules

three separate high potencies of natural vitamin A per capsule . . . in water-soluble form:

25,000 U. S. P. units **50,000** U. S. P. units **100,000** U. S. P. units

bottles of 100, 500 and 1000 capsules

MODERN MEDICINE
THE JOURNAL OF DIAGNOSIS AND TREATMENT

THE EDITOR'S PAGE

by WALTER C. ALVAREZ, *Editor-in-Chief*

On Doing Nothing Besides an Abdominal Exploration

On my desk is a letter typical of many that I have received, all of which have caused me to do a lot of thinking. The woman says that some years ago, because of a mistaken roentgen diagnosis of gallstones, she had her abdomen opened. When the surgeon found that the gallbladder, stomach, and duodenum were perfectly normal, he performed a gastroenterostomy. One wonders why he did not know that an unnecessary gastroenterostomy commonly causes so much distress that later it just has to be taken down.

Unfortunately, in this case the stoma did not work at all, and since gastric contents could not reach the jejunum, either directly or through the duodenum, the abdomen had to be opened again, and a jejunojejunostomy was performed. When this did not help enough, a partial gastric resection was done. Again the stoma did not work well, and again she had to have the abdomen opened. Later a jejunal ulcer formed, and again after an operation, something went wrong. Thus far, the woman has had 10 operations and still she is too ill to do any work. And all of this could have been avoided so easily if the surgeon had only had the wisdom to close the abdomen without doing anything.

Scores of times during my years as a consultant in medicine, I have seen cases like this which have made me wish that all teachers of surgery would keep saying to their graduate students, "When you explore and find nothing, do nothing, and just close. You must not assume, as you will be tempted to do, that it would help to remove an ovary or the uterus or the gallbladder or three-fourths of the stomach."

I have seen many very neurotic or slightly psychotic women who had gastroenterostomies or partial gastric resections performed after negative explorations. They have suffered for years with very distressing dumping syndromes which were due to great hypersensitiveness and were not helped by more operating. This week I learned that one of these women has ended up in a mental hospital and another has committed suicide.

As one of America's able surgeons used to say, "Because to err is human, all of us must occasionally explore a normal abdomen, but there is little excuse then for our performing an unnecessary operation."

A New Adrenal Hormone

A few weeks ago in London, Dr. Robert Gaunt announced that a group of experts, including the Nobel Prize winner, Prof. Reichstein, and some of the best of the Swiss and the British chemists, have isolated another powerful hormone from the adrenal glands. It is called aldosterone. The most remarkable announcement is that this drug is from 25 to 30 times as potent as desoxycorticosterone in maintaining a dog whose adrenal glands have been removed. In several other ways the drug is more powerful than desoxycorticosterone and about equal to cortisone. In a few of its functions, it is only one-half to one-fourth as potent as cortisone.

Any drug with so many wonderful properties should have a great future.

Tracing Cancer in the Lymphatics

At the recent meeting of the American College of Surgeons, Dr. Lawrence H. Strug reported injecting into the area around a cancer a drug which within fifteen minutes spreads through the lymphatics. The interesting point is that normal lymph nodes will take the dye, while those that have been partially or completely invaded by cancer cells will not. These studies in animals suggest that cancers in the stomach and lungs spread far more widely than surgeons have thought. This, of course, would explain many recurrences. Dr. Strug feels that this technic "will be superior to the probing finger and the unaided eye."

Special Article

The Need for Calcium Is Flexible

H. H. MITCHELL*
University of Illinois, Urbana

Prepared for Modern Medicine

THE most important advance in the understanding of calcium nutrition in the last decade is the accumulation of evidence, obtained with laboratory and farm animals and with man, that the animal organism is capable of adapting itself to a wide range of dietary levels of calcium. This is merely one phase of the general adaptability of the animal in meeting situations involving scarcities or excesses of nutrients. This capability accounts for the maintenance of life and well-being of the different races of men in the many geographic areas of the earth. Adaptation to internal and environmental stress is an indispensable characteristic of life itself.

The need for calcium during the period of growth and during pregnancy and lactation is obvious. For every gram of calcium deposited in the tissues of the fetus or of the growing child or secreted into the milk during lactation, a gram of calcium must be provided by the food. It is not obvious why the body is so wasteful of food calcium. Under what might be called the usual dietary conditions prevailing in this country, the body requires 3 to 5 gm. of calcium in the food for every gram deposited in the body. It is also not at all obvious why the adult, except during pregnancy and lactation, needs any calcium at all. Apparently, there is a constant turnover of skeletal and soft-tissue minerals during life, just as there is of the organic components. Work with radioactive isotopes has revealed this dynamic state.

Experimental and survey studies of calcium requirements have been largely concerned with adult nutrition. In 1946 we summarized the results of modern laboratory work done on adult human beings in this country and reported that the apparent requirements for calcium equilibrium—a condition in which the intake of calcium covers the inevitable outgo—averaged about 10 mg. per kilogram of body weight per day. The subjects were college students and young to middle-aged staff members and the dietary calcium was derived mostly from dairy foods. The individual results clustered as closely about the average as would be expected.

With no intention of covering all of the literature, I would like to call

*Professor Emeritus of Animal Nutrition, University of Illinois, Urbana.

attention to a few studies, yielding at times mean requirements that differ, sometimes widely, from the above value of 10 mg. In a later experiment from our own laboratories on 13 young men ranging in age from 19 to 44 years, the indicated calcium requirement was only 7.4 mg. per kilogram of body weight per day, an average value almost identical with that reported from the Peiping Union Medical College Hospital on 12 house officers of that institution. At Cornell University, a metabolism study on 12 college women from 19 to 31 years of age indicated a mean calcium requirement of 15.2 mg. per kilogram per day. All but one of these subjects had been consuming at least 2 cups of milk daily.

A group of investigators at Washington University School of Medicine in St. Louis were interested in the calcium needs of elderly persons. The subjects were inmates of the City Infirmary Hospital and were in the eighth and ninth decades of life with the exception of one who was 69. The calcium requirements of these persons averaged 13.5 mg. per kilogram daily. The diet contained liberal—almost massive—amounts of vitamin D. In a previous experiment without vitamin D, the indicated daily requirement was 5 mg. higher per kilogram of weight, demonstrating an incredible effect of vitamin D. A similar experiment was performed by a group of medical men working in the Baltimore City Hospital. The subjects were 7 male patients from 66 to 83 years of age. The calcium requirements were carefully studied and were found to average 12.5 mg.

An elaborate cooperative experiment on 136 women between 30 and 85 years of age was recently carried through by nutritionists from 5 agricultural experiment stations in the Middle West to determine the effect of age on mineral and protein metabolism. The subjects were representative samples of their respective communities and therefore were not all in prime health, although no one with active uncontrolled disease was selected. The diets were freely selected and were prepared and consumed at home. The indicated calcium requirements, predicted from regression of calcium balance on calcium intake in each age decade, averaged 872 mg. per day. Average body weights in each age group were not given; assuming an average weight of 60 kg., which may be too low since overweight was the main nutritional defect, the requirement per kilogram averaged 14.5 mg. of calcium per day. Significant differences among age groups were not statistically established.

Dietary surveys and laboratory tests in foreign countries afford evidence of the degree to which calcium requirements shift with food conditions. In Scotland, 7 inmates of an institution for the elderly indigent were given metabolism tests. The results indicated the ability of some to maintain calcium equilibrium on 200 to 300 mg. of the element daily. The average indicated requirement was 5.1 mg. per kilogram of weight daily.

The calcium balances of 10 apparently healthy adult men known

to have subsisted on low-calcium diets for years were studied in Lima, Peru. The men were in middle life and were inmates of a penitentiary. The studies were supervised by a competent nutritionist and indicated a remarkable ability of the human body to adjust itself to diets containing only 100 to 200 mg. per day. The mean requirement for maintenance varied from 1.4 to 2.9 mg. per kilogram daily. The senior author of the report, Dr. Hegsted of Harvard University, believes on the basis of such surprising findings "that all estimates of calcium requirements [in adult man] represent primarily a study of the previous dietary calcium intake." Dietary surveys of 3 geographic areas in Peru—the coast, the jungle, and the mountains—were conducted about the time of the Hegsted studies by the Ministry of Public Health. Although the level of calcium nutrition was revealed to be low, no clinical signs of deficiency of this nutrient were noted by physical and medical examination, indicating that adaptation to such low levels had been successful. The calcium concentration of the blood plasma was within normal limits, also testifying to the success of the adjustment.

Dietary surveys conducted by official agencies in Brazil, Chile, and Colombia reveal the general prevalence of low-calcium diets, containing 200 to 380 mg. per consumption unit. Even lower levels of calcium intake have been reported in southern Asia, confirming the concept of Hegsted that the calcium requirement of adult man is a vanishing quantity, paralleling the prevailing intake of calcium.

An appraisal of these sources of information, more intensive than can be given here, discloses several facts worthy of note. First, the experiments and surveys were competently carried out with only those shortcomings almost inevitably connected with such investigations: sometimes short periods of observation, often too few subjects, errors in community sampling, and occasional recourse to assumptions where direct information was not at hand. Second, the variation within the group samples is far less than that between group samples, so that the latter cannot be ascribed to random errors of sampling. This fact justifies the assumption that other than random factors are operating, presumably a physiologic adaptation. Third, age after maturity is reached is not an appreciable factor in determining calcium requirements in adult man, notwithstanding interpretations of contrary evidence with lower animals.

A picture of adaptation to lowered calcium intake is presented in two investigations, one in South Africa and the other in Norway. In the former case, 3 adult European males were maintained for seven to nineteen consecutive weeks on [1] their usual diet, [2] a diet containing 1 lb. of high extraction wheat bread, and [3] a diet containing 1 lb. of 70% extraction white flour. The calcium contained in the last 2 diets was restricted to 10 mg. per kilogram of body weight each day. However, the available calcium in the second diet was less than

that of the third by reason of the greater concentration of phytic acid in brown bread. On passing from the first diet with unrestricted calcium to the second diet with lower calcium in a less available form, the subjects lost calcium from the body, but as they became accustomed to the change, the balance improved, especially in 2 of the subjects, and equilibrium was finally reached, with improved retention on changing from the second diet to the third.

Experiments at the University of Oslo by Dr. Nicolaysen and his colleagues were ambitious ones involving 30 men from 20 to 76 years of age; the studies have been in progress for over four years. A diet containing 900 mg. of calcium per day was given for several months to a year and then suddenly changed to approximately half that level. The data on 14 of the men were sufficiently complete last year to report. These men were from 50 to 64 years in age and displayed varying degrees of adaptation measured by the calcium balance. One man of 50 years immediately displayed a negative calcium balance on the abrupt change in calcium intake and showed little tendency to improve his calcium economy over a period of eighteen months. A 44-year-old subject, on the other hand, responded to the change in the intake of calcium by no appreciable change in calcium balance, indicating remarkably perfect adaptation to a low intake of calcium. The other 12 subjects exhibited a decreasing loss of calcium from the body on the lower level for two to eight months, after which an equilibrium was reached.

In the case of a population such as that of Ceylon, where diets consist largely of cereals, pulses, roots, vegetables, and vegetable oils, with only infrequent use of milk and eggs, adaptation must start in childhood and extend throughout life. A report from the Nutrition Department of the Bacteriological Institute of Colombo gives some information of this situation. During rather short periods of observation, 4 children either 4 or 7 years of age retained calcium on intakes ranging from 70 to 245 mg. per day. The children were from the laboring classes. Unfortunately, no description of their physical condition is given. Calcium metabolism studies on adult Ceylonese were not attempted, but the authors secured indirect information from measurement of skeletons of 15 males and 14 females. Chemical analyses of presumably representative samples of bone were also made.

The heights of the persons from whom the skeletons were secured were estimated from the lengths of the femurs by the use of Pearson's formula in anthropometry. Body weights were estimated from tables of average weight for height at different ages.

Assuming the skeleton contained all of the body's calcium, an assumption subject to an error of about 1%, the average calcium content of the males was 1.65% and that of the females 1.52%. In our laboratory at Illinois we have completed the analyses of 3 cadavers of American men in satisfac-

tory nutritive condition; the calcium contents were 1.6%, 1.91%, and 1.52%. A comparison of the American and the Ceylonese values affords no basis for believing that the adaptive processes to which the Ceylonese were subjected during long subsistence on low-calcium diets have exacted a serious penalty from their bodies.

The reality of the adaptive powers of the human body in meeting situations in which the dietary supply of calcium is not much more than that required for deposition in growth, pregnancy, or lactation or than that commonly lost to the body by the endogenous processes continually operating is confirmed by several experiments on domesticated animals. Nevertheless, it is in direct conflict with what might be called the orthodox concept that each individual is endowed with a certain daily need for calcium which, if not met by diet, leads to nutritive disaster in time. This concept of the inflexibility of calcium needs is implied in formulating recommended allowances for calcium and is the only excuse for setting the recommendation 20 or 30% or more above mean determinations of requirements in any community. The statement commonly made in current nutrition literature to the effect that calcium deficiencies frequently exist in the United States and elsewhere seems to be based completely upon comparisons of current consumption of calcium with average requirements or with the "boosted" recommended allowances put out by official agencies. Such an interpretation of current food habits is vulnerable for reasons given above. A judgment of calcium deficiency in a community or in an individual should be made only if a low calcium intake is accompanied by some biochemical or clinical symptom of such a nutritional defect, such as a postprandial calcium concentration in the blood plasma of appreciably less than 9 mg. per 100 cc. In the adult, incomplete saturation of the bones with calcium, revealed by roentgenray examination, cannot be considered a sign of an inadequate calcium nutrition until it has been proved that complete saturation is essential to good health.

The authoritative medical publications do not subscribe to the belief of many nutritionists that calcium deficiency is quite common in this country. In the opinion of McLester and Darby, osteomalacia, usually a deficiency of both calcium and vitamin D, is exceedingly rare among the adult population of the United States. On the other hand, it is frequently confused with a relatively common disease of older people, osteoporosis. But this disease, although it involves bone decalcification, is "an abnormality of the protein matrix in which calcium is deposited, rather than a defect due to a lack of calcium." The latter statement, based upon a study of the clinical features of postmenopausal osteoporosis by Albright, Smith, and Reifenstein, is subscribed to by Pollack and Halpern in a recent bulletin of the National Research Council, "Therapeutic Nutrition." This bulletin is more concerned with the dangers of overfeeding with cal-

cium as it relates to the formation of renal calculi than with the incidence and dangers of calcium undernutrition. This is contrary to the "exuberant health" frequently said to be attainable by the liberal feeding of essential nutrients.

Youmans has stated that classic examples of primary nutritional osteomalacia due to calcium deficiency are rare in this country and are largely confined to pregnant women or women who have had many pregnancies.

This medical evidence and these clinical experiences of the rarity in this country of definite indications of calcium deficiency are to be expected if the body adapts to low levels of calcium. The methods of adaptation are not precisely known but probably involve [1] a reutilization of calcium released in the continuing erosion of the tissues, including bone, for resynthesis into functional organic combinations such as the calcium-protein complexes of the blood plasma and [2] a better utilization of food calcium when the supply is restricted. It has been well established that the less completely saturated the bony stores of calcium, preeminently the trabeculae of the cancellous bone, the higher the utilization of food calcium. The human infant, born with a low store of calcium in the skeleton, utilizes food calcium better than the older child, requiring only 2 gm. of food calcium or less for each gram deposited in the new tissues produced in growth, rather than 4 or 5 gm. The utilization of food calcium by the pregnant woman, especially in the last trimester of pregnancy, and by the lactating woman when the peak of her milk flow is reached may also be increased in proportion to the increased facilities for the disposal of food calcium.

The flexibility of calcium needs renders dietary standards for calcium of little significance when dissociated from the food habits prevailing in the community to which they are to be applied. In childhood, the normal rate of calcium retention should be maintained by the dietary program, starting at 16.5 mg. per kilogram of body weight daily, decreasing rapidly to 2.5 to 4 mg. in childhood, rising to 5.5 mg. during adolescence, and then decreasing to a very low value at maturity. At maturity the minimum calcium need to prevent loss of calcium by catabolic erosion is so low, depending upon the intake to which the person is habituated, that deficiency is improbable on natural diets.

During childbearing, women will require calcium for fetal nutrition in daily amounts rising at a self-accelerating rate from nothing to 300 mg. at term. While lactating, the calcium put into the milk for daily milk flows of 500 to 800 cc. will vary from 170 to 272 mg.

These, of course, are not requirements in terms of dietary calcium. To convert to dietary calcium, they should be multiplied by factors ranging from 2, or maybe somewhat less if the subject is accustomed to a low-calcium diet, to 5 or somewhat more if the calcium in the food sources is poorly utilized because of high fiber content or the

presence of inorganic acids which form insoluble salts with calcium.

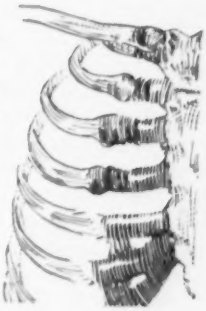
It is not the intention of this article to discredit any well-considered set of recommended allowances but rather to emphasize their limitations in view of modern developments in nutrition and particularly to deprecate the use of such allowances in judging the calcium nutrition of communities or individuals.

The 1953 revision of Recommended Dietary Allowances issued by the Food and Nutrition Board of the National Research Council states: "As previously noted, the allowances are tentative and approximate values, formulated for guidance rather than detailed application. When applied to individuals or to groups, they must be judged by the effects on the persons involved. The recommendations are not designed to provide a basis for judging the nutritional status of population groups but rather to serve as a guide for planning food supplies for these groups. If these allowances are used in dietary evaluation it is essential to appreciate that, while most persons whose consumption equals or exceeds the goals are presumably adequately nourished, not all persons who fail to reach these goals are malnourished."

Benign Swelling of Costal Cartilages

WILLIAM H. WEHRMACHER, M.D., NORTHWESTERN UNIVERSITY, CHICAGO, believes that Tietze's syndrome, a painful, benign, nonsuppurative swelling of the costochondral or sternoclavicular junction, should be included in the differential diagnosis of pain in the chest.

Ill-defined, recurrent pain in the chest occurs around the tender nodular swelling and may be similar to heavy pressure on the chest or a vague soreness or tightness or may radiate into the shoulder, arm, or neck. Activity, weather, respiratory infections, anxiety, fatigue, or recumbency may provoke distress.



Characteristic findings include tender bulbous or fusiform swelling around the costochondral or sternoclavicular junction (see illustration) with involvement of soft tissue, cartilage, and bone. Overlying skin is not altered, and roentgenographic examination is not of diagnostic value.

Pain is relieved by local application of heat, administration of salicylates, or local infiltration of procaine. Roentgen therapy to the involved area is ineffective.

Significance of Tietze's syndrome in differential diagnosis of chest pain. J.A.M.A. 157:505-507, 1955.

Estimation of Pulmonary Hypertension

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*The degree of pulmonary arterial hypertension is an important factor in determining the desirability of mitral valve operation in individuals who have rheumatic mitral stenosis.**

DETERMINATION of the pulmonary arterial blood pressure by direct measurement through cardiac catheterization is time consuming, expensive, and accompanied by some hazard. Small pulmonary emboli or auricular fibrillation may occur as a result of the procedure.

To establish reliable criteria for estimating the degree of pulmonary arterial hypertension and thus avoid routine catheterization of the heart in potential candidates for mitral valvulotomy, a study was made of 31 women and 9 men with rheumatic mitral stenosis. Previous hemoptysis, paroxysmal nocturnal dyspnea, or right-sided failure was noted, and physical examination, chest roentgenograms, and electrocardiograms were made. The findings were correlated with the pulmonary arterial pressure determined by cardiac catheterization.

The patients were classified into 3 groups according to the mean pulmonary arterial pressure. The first group of 18 patients, with no or only slight pulmonary hypertension, had pressures ranging from normal to 29 mm. Hg; the second group of 10 patients, with moderate pulmonary hypertension, had pressures between 30 and 49 mm. Hg; the third group of 12 patients, with severe pulmonary hypertension, had pressures of 50 mm. Hg or higher. In the latter group of patients, pulmonary vascular change may be irreversible.

The following observations were made:

- Right atrial systolic pressure, which was measured in patients with sinus rhythm, is not useful in the estimation of pulmonary arterial pressure.
- If the transverse diameter of the heart is not greatly increased, roentgen evidence of pronounced right ventricular hypertrophy usually denotes rather severe pulmonary hypertension.
- Use of precordial lead V_1 of the electrocardiogram for demonstrating right ventricular hypertrophy is very helpful in estimating the degree of pulmonary hypertension. Electrocardiographic evidence of right ventricular hypertrophy usually is not found with mean pulmonary arterial pressures below 28

*The clinical estimation of pulmonary hypertension accompanying mitral stenosis. Am. Heart J. 49:237-249, 1955.

mm. Hg but is observed consistently with pressures of 42 mm. Hg and above.

- The intensity of the apical diastolic murmur is of no aid for estimating pulmonary arterial pressures. Intense apical murmurs and thrills are often associated with slight pulmonary hypertension and only moderate mitral stenosis.
- The intensity of the pulmonic second sound is of no value. Severe pulmonary hypertension may be associated with only slight or moderate accentuation of sound.
- Hemoptysis is more frequent with severe pulmonary hypertension but is observed at all pressure levels.
- Right heart failure is found in almost all patients with pulmonary arterial pressures greater than 49 mm. Hg.
- Pulmonary edema is not seen with pulmonary arterial pressures below 26 mm. Hg. However, such edema frequently is not observed at higher pulmonary pressure levels either and is, therefore, of little value for estimation of pulmonary pressure.

Tobacco and the Cardiovascular System

HENRY I. RUSSEK, M.D., BURTON L. ZOHMAN, M.D., AND VIRGIL J. DORSET, M.D., U. S. PUBLIC HEALTH SERVICE HOSPITAL, STATEN ISLAND, N.Y., report that hypersensitivity to tobacco should be considered when patients who smoke have symptoms of cardiovascular disease, with or without concomitant electrocardiographic abnormalities.

Coronary disease may be erroneously diagnosed if nicotine sensitivity is not suspected and tests are not made after abstinence from tobacco. The characteristics of tobacco sensitivity—persistent dull precordial discomfort, ectopic beats, paroxysmal tachycardia, dizziness, exertional dyspnea, and electrocardiographic and ballistocardiographic changes—simulate coronary disease. However, in the hypersensitive individual with a normal heart, symptoms disappear and electrocardiograms and ballistocardiograms revert to normal after complete abstinence from tobacco.

Nearly all of 28 normal persons and 37 patients with coronary disease had significant increases in heart rates and blood pressures after smoking regular cigarets. Ballistocardiographic changes were noted in both groups, but significant electrocardiographic alterations were seen in only normal subjects.

Findings suggest that tobacco does not exert direct injury through coronary vasoconstriction in a patient with coronary disease. However, other cardiovascular, local, and systemic effects make continuance of smoking by such persons inadvisable.

Effects of tobacco and whiskey on the cardiovascular system. J.A.M.A. 157:563-568, 1955.

The Long-Term Respirator Patient

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*The goal of medical management of the respirator patient is to send him home breathing unassisted or with some respiratory aid.**

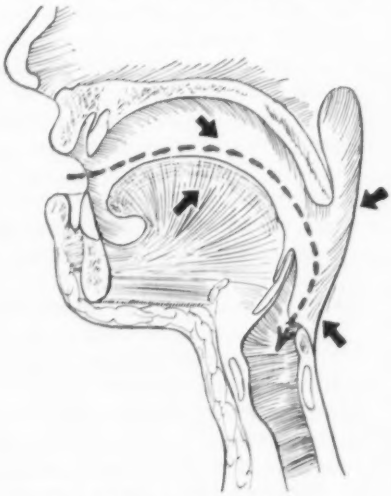
NUTRITION is important for respirator patients because of considerable loss of muscle mass and of metabolic changes due to prolonged immobilization. However, protein levels are normal in most of these patients, and, after initial periods of adjustment, good eating habits are usually developed. Vitamin supplements are advisable, and testosterone is sometimes given for the anabolic effect.

Oxygen therapy is used when necessary, but the airway must be adequate and clear. Tracheotomized patients need suction frequently; a plastic replica of the inner tracheotomy tube may be used for this purpose. Hypertension is frequently seen but apparently is not benefited by the usual therapeutic agents.

Respiratory infection is the most frequent complication. Nebulized Alevaire should be administered promptly through a tracheotomy tube or with an oxygen tent. Usually, a daily four-hour treatment is sufficient. However, for severe infection, therapy is continued twelve to twenty-four hours. Frequent suction and administration of broad-spectrum antibiotics are of value.

Bronchoscopic aspiration may be necessary. A mechanical coughing apparatus is available which depends upon lung distention with at least 40 mm. of mercury pressure and then an abrupt expiration by releasing pressure. This simulates the expulsive blast of a cough.

Weaning from the respirator is progressive, the ultimate goal being to increase unassisted breathing time and to lessen the need for respiratory aids. During a twenty-



In glossopharyngeal breathing, air is pushed into the lungs by the cheeks, tongue, and pharynx *(as indicated by arrows)* instead of being drawn in by the diaphragm.

*Medical management of the long-term respirator patient. J. Chron. Dis. 1:160-167, 1955.

four-hour period, the patient is changed from a tank respirator to a chest respirator and then to a rocking bed. Finally, he breathes unassisted for a certain length of time. Changes must be made gradually and under good control to avoid respiratory acidosis.

Observation of the minute volume as different respiratory aids are employed is essential. Determination of arterial oxygen saturation with an oximeter is useful. Carbon-dioxide tension and content and *p*H are the most accurate estimates of carbon-dioxide removal. Readings of alveolar air with an infrared gas analyzer correlate closely with the carbon-dioxide tension of the blood.

Positive-pressure inflation of the lungs is useful to help keep the thorax flexible. Physical therapy, such as chest compression, massage, and stretching of intercostal muscles, is also of value. Measurements of the degree of negative respirator pressure required to give varying tidal volumes determine the effectiveness of treatment.

Progress of patients is variable. Some persons cannot appreciably increase vital capacity. Glossopharyngeal breathing may give additional reserve when respiratory aids fail (see illlustration).

Home care with 1 attendant is possible when the portable chest respirator and rocking bed are tolerated. Physical and occupational therapy should be continued. If acute respiratory infection occurs, the patient should be rehospitalized.

Tests for Metastatic Cancer of the Liver

HARRY SHAY, M.D., AND HERMAN SIPLET, TEMPLE UNIVERSITY, PHILADELPHIA, state that a complete liver function profile should be ascertained before resection of a primary malignant tumor of the liver and repeated postoperatively, at six-month intervals if the patient is asymptomatic or more frequently if abdominal symptoms exist.

Metastatic hepatic cancer should be suspected when serum bilirubin is normal and serum alkaline phosphatase is elevated, especially if bromsulphalein retention also exists. Of 18 patients with primary carcinoma of the gastrointestinal tract with proved metastases to the liver, all had serum alkaline phosphatase levels above 9 units and 17 had total serum bilirubin levels below 1 mg. per cent. Of 9 patients in whom bromsulphalein retention was determined, all had abnormal values.

Similar serum findings may be produced by gallstones, hepatic granulomas, hepatitis without jaundice, and cirrhosis of the Banti type, but serum flocculation will also be altered. Flocculation reactions are abnormal only occasionally with metastatic carcinoma.

The value of serum alkaline phosphatase determination and bromsulphalein test in the diagnosis of metastatic cancer of the liver. J. Lab. & Clin. Med. 43:741-751, 1954.

Management of Chronic Nephritis

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*Increased practical knowledge of renal function and the problems of electrolyte and water management justifies a more optimistic attitude in the treatment of renal failure.**

ALTHOUGH cure is not possible for chronic nephritis, the patient with the disease can be helped to lead a productive and comfortable life. Sudden worsening of renal insufficiency from infection may be controlled; fatal potassium intoxication may be avoided; and acidosis, nausea, dehydration, and other symptoms may be ameliorated.

Persons with chronic nephritis that causes only slight renal insufficiency may be asymptomatic and completely unaware of renal disease. Often, presenting symptoms are not of nephritis but of some derangement secondary to renal failure.

General systemic manifestations may include weakness or exertional dyspnea related to anemia, anorexia or nausea, polyuria, increased fluid intake, a bad taste in the mouth, or hiccups.

Symptoms related to arterial hypertension include headache, often severe and at times intractable, sudden reduction in visual acuity, diplopia, or the entire symptom complex of congestive heart failure. Associated with abnormal fluid and electrolyte concentrations are hyperpnea which may be extremely distressing in the patient with severe uncompensated acidosis; tetany from calcium disturbance; extreme weakness or paralysis due to hypokalemia; or a hemorrhagic tendency.

Diet—For the patient with latent chronic nephritis but no renal insufficiency or edema, a special diet is not required. With renal insufficiency showing increased blood urea, dietary protein is restricted. Initially the intake is reduced to 30 to 40 gm. a day. An adequate caloric intake, mainly carbohydrate, must be maintained.

With severe renal insufficiency the usual diet is not well tolerated because of anorexia and nausea. Carbohydrate and fat must be adequate to spare bodily protein. Commercial emulsions are available for feeding or for administration by nasal tube. Intravenous dextrose may be employed if needed.

With early to moderate renal insufficiency, a fluid intake of 2,400 to 3,000 cc. a day is urged. Intravenous fluid may be needed with prolonged vomiting and should contain chloride and sodium.

Electrolyte balance—The usual disturbance with renal insufficiency is metabolic acidosis. Hyperpnea from acidosis may be controlled

*Management of chronic nephritis. Arch. Int. Med. 95:247-255, 1955.

by the administration of sodium lactate or sodium bicarbonate. Either may be given orally if tolerated or parenterally if necessary. Initially, 75 to 100 mEq. of sodium is sufficient. The level of plasma carbon dioxide is not always a reliable indication of the degree of compensation in renal insufficiency. Sodium administration may increase edema but this may be tolerated if hyperpnea is relieved.

Potassium retention occurs late in renal insufficiency. This disturbance is detected by the appearance of such electrocardiographic changes as high peaked T waves, prolonged QRS interval, and loss of P waves. Management consists of restriction of foods of high potassium content and the oral or rectal administration of a cation-exchange resin in the hydrogen or ammonium cycle.

Rare conditions are the salt-losing and potassium-losing syndromes. These losses occur in addition to that resulting from acidosis. Correction is managed by the administration of sodium or potassium commensurate with the losses.

Other electrolyte disturbances include hyponatremia, hypochloremia, and acid-radical retention.

Anemia—The anemia of chronic nephritis is not relieved by iron, liver, or B_{12}. Cobalt may help but is poorly tolerated by the gastrointestinal tract. Severe anemia should be corrected by repeated small blood transfusions given slowly.

Hypertension—An elevated blood pressure constantly accompanies chronic nephritis. Often hypertension leads to congestive heart failure. Antihypertensive drugs may be used. Congestive heart failure is treated with digitalis, restriction of salt, and decreased physical activity.

Uremia—Symptoms of uremia include fatigue, weakness, vomiting, headaches, hiccups, pruritus, muscular twitchings, convulsions, and coma. Fatigue and weakness may be lessened by blood transfusions. Nausea and vomiting are often persistent but may be relieved by Dramamine, Bonamine, or Thorazine. Severe headache may be ameliorated by elevating the head of the bed 10 to 12 in. Spinal puncture may also help. Antihypertensive drugs are useful.

Pruritus is poorly controlled, although soothing lotions may be applied. Sedatives often relieve muscular twitchings and apprehension. Convulsions may require intravenous barbiturates.

¶ GENERALIZED SCLERODERMA may be temporarily benefited by treatment with cortisone. A. Salomon, M.D., of Boston City Hospital and associates report that dyspnea and cough ameliorated, exercise tolerance increased, and skin became softer in 3 women with pulmonary involvement. Relapse occurred within four to six months after a total dose of 4.6 gm. of the drug was given in diminishing daily doses for thirty-five days.

Arch. Int. Med. 95:103-111, 1955.

Bacteria Resistant to Antibiotics

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*Selective use of antibiotics, correction of anatomic defects, and isolation of the patient are necessary to prevent the development and spread of antibiotic-resistant organisms.**

One of the most difficult problems in the management of infectious disease is control of bacteria resistant to antibiotics. Resistance may develop on exposure to an antibiotic or resistant strains may proliferate after susceptible strains are eliminated. Also, previously sensitive bacteria may become resistant. Mortality rates in several forms of infection have widely fluctuated because of development of resistant organisms.

Antibiotic resistance occurs only in some groups of bacteria, including alpha and gamma streptococci, coliform organisms, *Proteus, Pseudomonas, Micrococcus,* and *Mycobacterium tuberculosis.* Response to antibiotic therapy is usually slow or incomplete.

Pneumococcus, Meningococcus, beta hemolytic streptococci, *Gonococcus, Shigella,* and *Hemophilus influenzae* usually react promptly to the proper antibiotic and rarely develop resistance. Infections due to *Brucella, Salmonella typhosa,* or *Rickettsia* respond rapidly to treatment but tend to recur. However, benefit is usually derived from repeated courses of therapy. Intracellular parasitism rather than drug resistance is probably the cause of relapses.

Resistance develops more quickly to streptomycin and Erythromycin than to other antibiotics. The resistant bacteria spread from infected patients to hospital personnel, who become asymptomatic carriers and transmit the infection to other patients. The number of attendants caring for the patient should be limited. Isolation is essential, and particular care must be taken with the hands and respiratory tract. Overdosage of antibiotics must be avoided, since the number of carriers varies with the frequency of administration.

When infection is due to a rapidly resistant organism, severity of the illness governs treatment. With slight infection, therapy is withheld until sensitivity tests have been made; then the appropriate antibiotic is selected. Severe infections which may be fatal require therapy before sensitivities are established. The antibiotic or combination of antibiotics is selected on the basis of the usual sensitivity of the or-

*Clinical significance of antibiotic-resistant bacteria. J.A.M.A. 157:327-331, 1955.

ganism. Potentially toxic agents may be used if necessary.

Before sensitivity reports are obtained, severe micrococcal infections are best treated with a combination of Erythromycin and chloramphenicol. Penicillin and streptomycin are used together for infections due to alpha or gamma streptococci. A tetracycline derivative is preferable for coliform infections, and polymyxin is used for *Pseudomonas*. *Proteus* infections may be treated with penicillin, chloramphenicol, or a tetracycline.

Chronic infections of the respiratory, urinary, and intestinal tracts and the skin are the most troublesome sources of resistant bacteria. Anatomic and physiologic defects tend to perpetuate the infection, and bacterial flora is usually mixed.

With urinary infections, antibiotics are used to control the infection while anatomic defects are being corrected. Therapy should be continued well after symptoms have disappeared in order to eliminate foci of infection. If antibiotics do not sterilize the urine, the most effective agent is used to suppress infection during definitive treatment.

In the preoperative treatment of bronchiectasis, attempts to eradicate infection should be vigorous. When the disease is too far advanced for resection, large doses of antibiotics will foster resistant strains. Therefore, antibiotic therapy should be reserved for acute exacerbations, or small doses of a tetracycline are given to prevent implantation of pathogens.

Yokohama Asthma: an Environmental Disease

LT. COL. TYRON E. HUBER, M.C., U.S.A., WASHINGTON, D. C., AND ASSOCIATES describe a disease entity which is notable as severe and recurrent asthma in patients with no previous respiratory difficulties. The syndrome, first observed at Yokohama, Japan, commonly occurs during smog in harbor areas surrounded by hills and in manufacturing areas.

The disease is most common during the fall and early winter months. The initial symptom is bronchitis with subsequent dyspnea, usually occurring in the early morning. Dyspnea may become severe enough to necessitate permanent evacuation from the offending area.

Therapeutic measures employed for the condition are usually ineffective. Ephedrine sulfate, epinephrine, and aminophylline may induce temporary relief, but tolerance rapidly develops.

Biologic studies indicate that allergens and inhalants of an allergic type rarely cause the disease. Skin reactions to allergic agents are negative. Air pollution by smog and such contaminants as ether-soluble aerosols and dust is apparently the primary cause.

New environmental respiratory disease (Yokohama asthma). Arch. Indust. Hyg. 10:399-408, 1954.

Middle Lobe Syndrome

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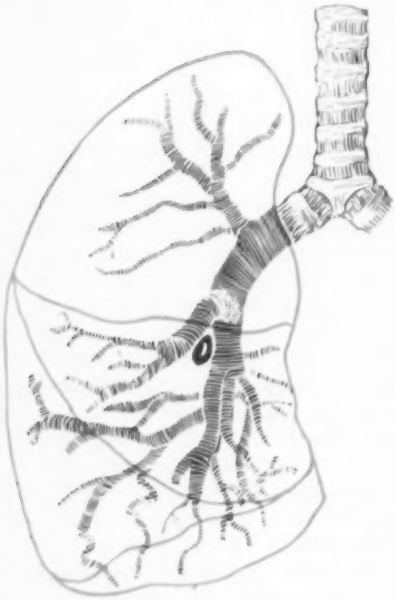
Fitzsimons Army Hospital, Denver

*Although all patients with middle lobe bronchial compression by lymphadenopathy have similar symptoms, the etiology is diversified.**

CRITERIA for diagnosis of middle lobe syndrome are [1] hilar or peribronchial lymphadenopathy, [2] bronchostenosis, and [3] pathologic changes in the distal bronchi and parenchyma. In order to establish definite treatment, simulative diseases of the middle lobe must be differentiated.

The right middle lobe bronchus is susceptible to compression because the branch is short, narrow, acutely angled at the origin from the bronchus intermedius, and close to lymph nodes that drain the right lower as well as the middle lobe (see illustration).



Bronchial anatomy

Bronchial compression and parenchymal damage may be temporary, as with acute lymphadenopathy caused by respiratory infection in a child. If acute bronchitis occurs secondary to lymphadenitis, the middle lobe is narrowed further.

Caliber of the bronchus is reduced when the wall is penetrated by severe peribronchial inflammation or acute caseous tuberculous nodes. Calcified nodes seen with histoplasmosis, as well as tuberculosis, may also erode the wall and cause bleeding, further infection, or broncholiths.

Changes in the distal bronchi and parenchyma vary, depending on the type and duration of obstruction and whether secondary infection is in the distal lung. If infection does not occur, an atelectatic middle

*The middle lobe syndrome and its relationship to certain aspects of middle lobe disease. J. Thoracic Surg. 29:283-294, 1955.

lobe may be noted only on a chest roentgenogram.

Generally, however, repeated infections cause persistent lymphadenopathy and further bronchial compression and obstruction. Damage is increased after each episode, and ultimate results are gross bronchiectasis, chronic pneumonitis, fibrosis, lung abscess, bronchopleural fistulas, and empyema.

In children, the middle lobe syndrome is often due to tuberculous hilar adenopathy. Tuberculosis is not, as formerly believed, the only etiologic agent. Bronchial compression from lymphadenopathy may also be caused by esophageal trauma, histoplasmosis, sarcoidosis, and nonspecific hilar adenopathy. A fungus is probably responsible in many instances attributed to granuloma of undetermined etiology.

Bronchiectasis and other diseases of the middle lobe may simulate the syndrome. Neoplasm should be considered if the patient is elderly.

Patients with the middle lobe syndrome generally have cough, sputum, recurrent pneumonitis, and hemoptysis. Thorough examination and laboratory investigation, including skin tests and cytologic studies, may reveal the etiology, but exploratory thoracotomy is sometimes necessary.

Chest roentgenographic findings vary from a completely atelectatic middle lobe to acute pneumonitis. A right lateral projection may show changes not visible on an anteroposterior film. Hilar lymphadenopathy, especially with calcification, should be noted. However, enlarged nodes may not be apparent after the acute phase.

Origin of blood and secretions is revealed and stenosis can be evaluated by bronchoscopic examination; neoplasms, foreign bodies, perforating lymph nodes, or broncholiths may be detected. Bronchogram may demonstrate obstruction beyond the range of a bronchoscope. Bronchostenosis also may not be evident after acute inflammation subsides.

Middle lobectomy is the preferred treatment. Conservative management may be considered if the patient is asymptomatic or elderly but is suitable only if the lesion is proved to be benign and stable.

¶ RHEUMATIC FEVER AFTER STREPTOCOCCAL INFECTION is prevented more often by penicillin than by other antibiotics. Capt. Francis J. Catanzaro, M.C., U.S.A., and associates of the Francis E. Warren Air Force Base, Wyo., and Western Reserve University, Cleveland, find that effective blood levels are maintained when a single injection of 600,000 to 900,000 units of benzathine penicillin is administered daily for ten days or when 250,000 to 500,000 units of penicillin is given orally twice daily for ten days. Oxytetracycline, Erythromycin, and chlortetracycline are employed only when the patient is sensitive to penicillin and are also administered for at least ten days.

Ann. Int. Med. 42:345-357, 1955.

Concept of Hypersplenism

WILLIAM DAMESHEK, M.D.
Tufts College, Boston

*Hypersplenism is due to an inhibitory phenomenon induced in some manner by a large spleen mediated through a humoral mechanism.**

WITH an enlarged spleen, an unusual degree of inhibitory or depressant effect on the bone marrow occurs. Anatomic enlargement of the spleen is productive in some obscure manner of physiologic hyperfunction and is accompanied by neutropenia, anemia, and thrombocytopenia, either alone or in combination.

Splenomegaly, blood cytopenia, and a full marrow, that is, a normally hypercellular marrow free from proliferating cells, are also seen. Splenectomy results in correction of the cytopenia.

Hypersplenism occurs in such conditions as [1] subacute and chronic infectious hyperplasia of the spleen; [2] portal hypertension; [3] lipid cellular disorders, particularly Gaucher's disease, in which the normal splenic tissue is almost completely occupied by lipid material stored principally in the reticuloendothelial cells; and [4] some instances of lymphosarcoma and other neoplasms such as hamartoma and splenic cyst. Occasionally, the spleen is enlarged but shows no particular disorder; this is probably the result of a previous splenic infection.

Hypersplenic syndromes possibly induce various effects, but those currently recognized are concerned with the blood cells. Hypersplenism may be idiopathic, primary, or secondary to some well-defined cause. The cell type that is reduced in the blood is usually increased in bone marrow.

Splenic neutropenia is the most sharply defined hypersplenic syndrome. Recurrent infection is often the presenting symptom. Over a period of years, the patient has frequent fever, with sore throat, mouth ulcers, and sometimes lesions of the hands and feet. Finally, a blood count demonstrates well-defined leukopenia and neutropenia. The spleen is usually enlarged 2 to 6 cm. below the left costal margin.

The cause of splenomegaly and associated cytopenia may not be apparent. However, primary disease is evident in some instances, as with rheumatoid arthritis, portal hypertension and cirrhosis of the liver, sarcoidosis, brucellosis, and chronic malarial splenomegaly, syphilis, or tuberculosis.

Splenic anemia may be either hemolytic or nonhemolytic. With the former type, all the features of a hemolytic process are seen, including anemia, slight icterus, bilirubi-

*Hypersplenism. Bull. New York Acad. Med. 31:113-136, 1955.

nemia, and an increase of reticulocytes of 3 to 10%. Examination of bone marrow reveals hypercellular preparation in which nucleated red cells are conspicuously increased; granulocytes and megakaryocytes are also multiplied. A striking and permanent increase in blood counts to normal values occurs after splenectomy.

The nonhemolytic types of splenic anemia are generally associated with more fundamental disturbances. Anemia may be caused by splenic inhibition of bone marrow erythropoiesis.

The term Banti's syndrome should not be used unless chronic hepatitis and hepatic failure, portal hypertension, splenomegaly, anemia, leukopenia, neutropenia, and thrombocytopenia coexist.

In some conditions that resemble hypersplenism, the spleen becomes enlarged secondarily. These include hereditary spherocytosis, autoimmune acquired hemolytic anemia, and acute idiopathic thrombocytopenic purpura.

At present, splenectomy is the most effective therapy for hypersplenism and should be done for splenic rupture, hereditary spherocytosis, and chronic idiopathic thrombocytopenic purpura. The operation is usually not performed if leukemia or infection, such as malaria or subacute bacterial endocarditis, which can be controlled by appropriate therapy, coexists.

Six-Minute Test of Insulin Response

GEORGE E. ANDERSON, M.D., STATE UNIVERSITY OF NEW YORK, NEW YORK CITY, describes a simple test to determine responsiveness to insulin. A 20-gauge needle is inserted into an antecubital vein, and physiologic saline is injected by slow drip to keep the needle patent between blood withdrawals. With the patient recumbent, 3 units of glucagon-free insulin is administered intravenously. Blood samples are obtained precisely two, four, and six minutes after injection, and blood glucose levels are determined by the Somogyi-Nelson macro method.

Blood withdrawn during needle insertion, as well as 2 or 3 subsequent samples withdrawn over an eight-minute period before the fasting sample is obtained, is discarded to eliminate any normal suprarenal activity incidental to the procedure. Blood pressure readings before and during the test detect unusual adrenal response.

The obese adult patient before treatment, with inadequate treatment, or with insufficient glucose control due to intercurrent infection has no response or has a rise in blood glucose level. The juvenile-type patient of any age with fair control and the adult obese patient with good control have decided drops in sugar levels. The labile diabetic patient has bizarre precipitous changes.

Six-minute test of responsiveness to insulin. Brooklyn Hosp. J. 12:5-19, 1954.

Diagnosis and Treatment of Thymoma

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U. S. Public Health Service Hospital, Staten Island, N.Y.

GLENN GORDON, M.D.
San Francisco

*Exploratory thoracotomy should be done early for thymomas and unidentified anterior mediastinal masses.**

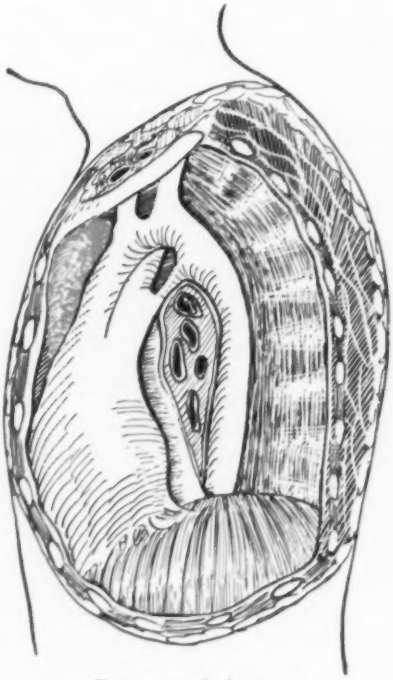
COUGH, hoarseness, cyanosis, engorgement of neck veins, and edema of the face and upper extremities may result when an enlarged thymus compresses mediastinal structures. Common complications are pleural or pericardial effusion, obstruction of the trachea and esophagus, and pulmonary invasion. About 15% of patients with thymoma have myasthenia gravis.

Frequently, however, benign or malignant tumors of the thymus gland do not produce symptoms and are detected during routine chest roentgenographic examination. Slow growth of the mass or unusual location may also make the diagnosis difficult.

Any round, sharply defined mass situated behind the sternum and above the pericardial sac is suggestive of a thymoma. The tumor is usually retrosternal (see illustration) but may be found at the level of the ninth or tenth thoracic vertebra, above the diaphragm, in front of the pericardium, or on a mainstem bronchus.

About 30% of the growths are calcified. Calcium is generally deposited peripherally but may be dispersed.

When an anterior mediastinal mass is detected, lateral and oblique chest roentgenograms should be



Retrosternal thymoma

*Thymoma: diagnosis and treatment. Ann. Int. Med. 42:283-295, 1955.

made. Fluoroscopic study with barium swallow and cardiovascular examination are performed. Angiocardiographic examination may be necessary to determine the position of the mass in relation to the heart and vessels.

Early surgery is advisable if tumor is diagnosed or if the etiology of the mass cannot be determined because thymomas have highly malignant potentialities. The thymus may undergo carcinomatous or sarcomatous alterations and may invade surrounding organs or metastasize.

General endotracheal anesthesia is preferred, since 1 or both pleural spaces may be entered. Exposure is adequate with the lateral recumbent position, but the median sternotomy incision provides better visualization. Unless surrounding structures are invaded, thymomas are usually readily removed. The entered pleura should be drained by suction to promote prompt reexpansion.

Morbidity and mortality are low if complications do not occur. When neighboring organs are involved, increased risks are assumed in the attempt to extirpate the tumor completely since no other therapy is available.

Total and Subtotal Gastric Resection

RALPH COLP, M.D., AND EDWARD E. JEMERIN, M.D., MOUNT SINAI HOSPITAL, NEW YORK CITY, report that radical subtotal gastrectomy is the recommended operation for stomach carcinoma unless the entire or proximal stomach is involved. However, the type of resection is not as important as complete removal of carcinoma and lymphatic drainage zones. Despite total resection, some lymphatic pathways are still inaccessible, and many patients die of metastases soon after operation even though resection lines are free of malignant tissue.

The mortality rate from total gastrectomy has decreased but is still appreciably higher than the rate from subtotal resection. The salvage rate is also low, although a true comparison cannot be made. A significant improvement in long-term survival will probably depend upon early diagnosis when the lesion is still relatively confined to the stomach and standard radical subtotal gastric resection can be performed.

Comparison of 2 consecutive five-year studies showed that limits of gastric resection were increased from 41 to 52%, while the mortality decreased from 35 to 20%. Of the patients surviving resection in the first group, one-third lived over three years and nearly one-fourth survived five years. In the second group, 42.9% lived more than three years and 27.3% survived for five years.

Is total gastrectomy justified in carcinoma of the stomach? New York J. Med. 55:75-82, 1955.

Surgery for Esophageal Disorders

G. V. BRINDLEY, JR., M.D.
Scott and White Clinic, Temple, Tex.

*Because of recent advances, surgical treatment of esophageal diseases is as efficient and safe as comparable major surgery done elsewhere in the body.**

IMPROVEMENTS in anesthesia and development of chemotherapy are important factors in the progress of surgery for diseases of the esophagus. Equally important are experimental studies of esophageal anatomy and physiology.

Diverticuli of the esophagus are common and may be classified as traction and pulsion types. Traction diverticuli are usually found in the middle third of the esophagus near the hilar structure. Obstructive symptoms are rare, but esophagitis is usually seen. Occasionally, subsequent stricture may require dilatations. Rarely, stenosis may be sufficient to necessitate resection of the involved segment.

Pulsion diverticuli are common and ordinarily are seen in either the cricopharyngeal region or the lower one-third of the esophagus. Regurgitation is frequent. Since the advent of chemotherapy, 1-stage resection can be performed safely with good results.

Esophageal atresia with tracheoesophageal fistula is the most common cause of dysphagia in the newborn infant. The characteristic symptoms seen soon after birth are excessive salivation and episodes of cyanosis and dyspnea. Feedings are immediately regurgitated. A soft rubber catheter passed into the upper segment of the esophagus usually locates the obstruction. Diagnosis is confirmed by introduction of a small amount of Lipiodol into the catheter.

If air is detected in the stomach and intestines by roentgenographic examination, a right extrapleural or transthoracic approach is recommended, since primary esophageal anastomosis can usually be done after ligation and division of the fistula. If no air is seen, primary anastomosis usually cannot be done, and a left transpleural approach is used to facilitate esophagogastrostomy.

Achalasia is a common cause of obstruction and may be associated with stricture. Uncomplicated achalasia is ordinarily best treated by dilatation.

If stricture coexists, cardiomyoplasty is ordinarily effective. A longitudinal incision is made through the muscularis of the lower segment of the esophagus through the serosa and muscularis of the cardia, and the muscle fibers are separated, allowing the mucosa to bulge into the incision. Severe ste-

*Diseases of the esophagus: surgical treatment. Texas J. Med. 51:57-63, 1955.

nosis and dilatation may require resection of the lower esophagus and esophagogastrostomy.

Acquired strictures of the esophagus may be due to [1] swallowing irritating substances, such as acids or alkalies; [2] infection with subsequent ulceration and stenosis; or [3] regurgitation of acid gastric contents into the lower esophagus with consequent esophagitis and stricture.

Dilatation is usually sufficient for simple, incomplete strictures. The stenotic segment is resected if dilatation is not successful. If the stricture is long, resection with esophagogastrostomy or a Roux-Y type anastomosis is the recommended procedure.

Benign tumors are rare and include fibromas, leiomyomas, papillomas, and esophagenic cysts. Leiomyomas and fibromas often can be dissected without opening the mucosa, and the other types can be removed locally. Esophageal resection is rarely necessary.

Spontaneous rupture is caused by sudden increase in intraesophageal pressure, usually associated with violent retching or vomiting. Diagnosis is confirmed by a Lipiodol swallow observed during fluoroscopic examination. Immediate thoracotomy, wound debridement, repair of the esophageal defect, and catheter drainage of the pleural cavity should be done.

Since prognosis for *carcinoma of the cervical esophagus* is poor, surgery should probably be reserved for lesions confined to the esophagus; advanced lesions should be treated with irradiation.

Cancer of the upper and middle thoracic esophagus is best resected by 2 surgical teams. While one operator explores the thorax through an anterior right thoracic incision, the other surgeon mobilizes the stomach through a left paramedian abdominal incision. After the esophagus is mobilized, the stomach is passed into the right pleural cavity. Esophagogastrostomy is performed following resection of the malignant lesion.

With stenosed inoperable lesions, dilatation and irradiation are of value.

In 80% of patients, *carcinoma of the lower esophagus* is actually adenocarcinoma of the cardia of the stomach with extension to the esophagus. The remaining patients have squamous-cell esophageal carcinoma. A left transthoracic partial gastrectomy and lower esophagectomy are usually done.

¶ INGUINAL HERNIAS IN CHILDREN are more apt to become irreducible during the first year of life than at any other age. In a group of 595 children aged less than 3 months to 12 years with inguinal hernias, 50 had irreducible conditions, reports Irvine Smith, M.B., of the Leeds General Infirmary, England. Of these patients, 29 were less than a year old. Strangulation was evident in 28% and gangrene in 4% of irreducible hernias.

Brit. J. Surg. 42:271-274, 1954.

Free Mesothelial Grafts

GORDON M. CARVER, JR., M.D.
Duke University, Durham, N.C.

*Use of free autogenous mesothelial grafts prevents re-formation of permanent fibrous adhesions in the peritoneal cavity.**

PERITONEAL adhesions may occur in 80 to 90% of patients after abdominal surgery. Although most adhesions are fibrinous and eventually disappear, some may cause serious disability with intestinal obstruction, persistent pain, and recurrent visceral dysfunction. Surgery may be required when a fibrous intraabdominal adhesion involves the small intestine.

Fig. 1. Adhesions between adjacent loops of bowel

After an injury to the serosa of the bowel, a serous or seropurulent exudate accumulates. The sticky fibrin formed after coagulation of the exudate causes adherence of adjacent structures. If the initial injury is slight, phagocytic removal of the fibrinous material occurs and, after dissolution of the adhesion, the abdominal structures fall free. The site of adherence is covered by normal mesothelium. However, if serosa and subserosa are damaged at the initial operation, fibrotic healing takes place and the result is a permanent scarred union between adjoining viscera.

Adhesions between adjacent loops of bowel (Fig. 1) may be divided with small plastic dissecting scissors. All remaining scar is removed from the loop of small bowel, leaving the vascular muscularis exposed and assuring an excellent blood supply for a graft (Fig. 2).

A free graft of mesothelium is obtained from the omentum, falciform ligament, or mesentery of the bowel. When the omentum contains a considerable amount of fat and the mesothelial layer is difficult to separate without adherence of fat to the graft, the falciform ligament is usually large and well-developed and provides a good donor site for a large graft. The mesentery of the

*An experimental and clinical study of free mesothelial grafts in the treatment of intraperitoneal adhesions. Surg., Gynec. & Obst. 100:163-170, 1955.

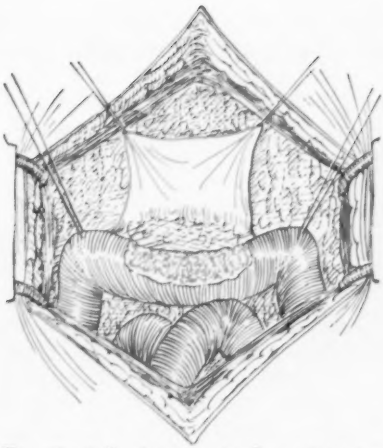


Fig. 2. Adhesions excised, and mesothelial graft lifted from omentum

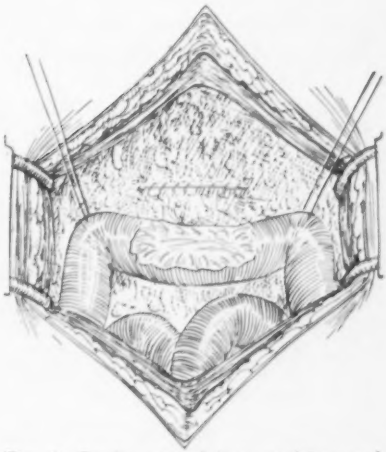


Fig. 3. Graft sutured into position and detached from omentum

bowel is also an excellent donor site, but care must be taken to avoid the blood supply to the adjacent loop of bowel. The thicker parietal peritoneum, while easier to work with, is useful only for small recipient sites since such grafts have a tendency to contract.

The mesothelial donor site is freed on only 3 sides; the fourth side is not cut until the graft has been fixed to the recipient loop of bowel (Fig. 2). This technic counteracts the tendency of the thin graft to curl up. The mesothelium holds sutures of No. 00000 silk without tearing. After the graft is sutured in place, the donor site is closed with interrupted or continuous suture of No. 00000 silk (Fig. 3).

Atropine and Scopolamine for Thyrotoxicosis

STANLEY J. SARNOFF, M.D., AND OLIVER COPE, M.D., HARVARD UNIVERSITY AND THE MASSACHUSETTS GENERAL HOSPITAL, BOSTON, in a study of the effect of atropine and scopolamine on subsequent injection of epinephrine in thyrotoxic patients, report that scopolamine is preferred for preoperative medication.

Atropine augments the reactions of epinephrine, since preliminary injection causes elevations of heart rates and blood pressures of both thyrotoxic and normal patients. Injection of scopolamine augmented the reaction to epinephrine less often and to a smaller degree than atropine.

The effect of atropine and scopolamine on the subsequent injection of epinephrine in thyrotoxic and euthyroid patients. Anesthesiology 15:484-494, 1954.

Neurologic Sequelae to Spinal Anesthesia

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LEROY D. VANDAM, M.D.
Peter Bent Brigham Hospital, Boston

*Severe neurologic damage need not occur after spinal anesthesia, and slight complications are generally transient.**

MORTALITY and toxicity are less with spinal than with general anesthesia when patients and operations are comparable. Fear of incapacitating lesions of the nervous system should not limit use of the spinal technic to rare instances.

Neurologic sequelae of spinal anesthesia are minor and generally temporary. When a complication occurs, improvement rather than progression can be expected in the postoperative period. Many unfavorable effects are caused by traumatic lumbar puncture and can be eliminated by improved technic of administration.

Spinal anesthetics were administered 10,098 times to 8,460 persons. Selection of patients was broad. Individuals with pulmonary or cardiac disease or intestinal obstruction and obese and elderly patients were included in the study. Spinal anesthesia was selected for all operations performed below the diaphragm.

Persons who had backache, frequent headaches, or difficulties with the legs or who had had a previous unsatisfactory experience with the method were eliminated. The spinal route was not used when active or quiescent disease was detected or when conditions in the back precluded asepsis or atraumatic puncture.

Information was obtained for 89% of the administrations six months after operation. All patients with early signs or symptoms were contacted a half year postoperatively. Neurologic disease evidently does not develop after a latent period but is manifested soon after surgery.

The only instance of incapacitating neurologic disease was later shown to be meningioma of the spinal cord. Symptoms began immediately after surgery, but diagnosis by myelographic examination was delayed since arachnoiditis was suspected. Postoperative complications should not be arbitrarily attributed to spinal anesthesia.

Headache, noted in 9% of the males and 15% of the females, is the most common sequela. Postural headache is probably related to lumbar puncture and altered cerebrospinal fluid pressure. A psychic in-

*Long-term follow-up of patients who received 10,098 spinal anesthetics. J.A.M.A. 156:1486-1491, 1954.

fluence does not seem important since incidence of headache was the same among 75 patients who received spinal anesthetics only after induction of general anesthesia.

Numbness or tingling in the feet, legs, thighs, or perineum occurred in 0.7% of the patients. Symptoms were not progressive and generally disappeared within a year.

Leg cramps, pulling, drawing, or twitching was reported by 0.9% of the patients. Neurologic signs were not associated, and most of the symptoms eventually subsided. Identical complaints were received from the same percentage of persons in a general anesthesia group.

Unilateral foot drop was observed in 2 patients after spinal anesthesia. Pronounced improvement occurred within a year.

Traumatic lumbar puncture was the cause of severe backache with radiation to the legs in 4 patients. Spasm of the back muscles can be attributed to puncture because, in 2 of the 4 instances, anesthetic was not injected into the subarachnoid. All the patients improved within three to eighteen morths.

Unrecognized preexisting neurologic disease of 9 patients was apparently aggravated by the procedure. The lesions were lumbar disk syndrome, spondylitis, hemiparesis and bladder weakness, encephalitis, latent herpes zoster in the area of the lumbar spinal roots, meralgia paraesthetica, and cord tumor.

Preoperative Hyatrobal and Methadone

JOSEPH HYDE PRATT, M.D., AND JOHN S. WELCH, M.D., MAYO CLINIC AND FOUNDATION, ROCHESTER, MINN., believe Hyatrobal and methadone hydrochloride are superior to morphine and atropine for preparation of surgical patients.

A study was made of 246 vaginal hysterectomy patients who had thiopental sodium anesthesia to compare preoperative medicaments. The women received [1] Hyatrobal and methadone; [2] Hyatrobal; or [3] pentobarbital sodium (Nembutal), morphine, and atropine. Nembutal or Hyatrobal was given by mouth, and methadone or atropine and morphine were administered by hypodermic injection. Hyatrobal is a combination of pentobarbital sodium, atropine sulfate, and scopolamine hydrobromide.

Patients who had preoperative morphine and atropine required 11% less anesthetic than did women in the other groups. However, Hyatrobal and methadone produce less preoperative lethargy and incoordination than morphine and atropine, though patients are relaxed. Reaction to Hyatrobal is less prolonged; patients awaken and regain appetite faster. The substance also decreases nausea and vomiting and respiratory depression.

Hyatrobal and methadone hydrochloride in preoperative preparation of patients. J.A.M.A. 157:231-234, 1955.

Presacral Neurectomy for Dysmenorrhea

WILLIAM T. BLACK, JR., M.D.
Memphis

*Sectioning of presacral sympathetic nerves often benefits patients with longstanding dysmenorrhea of uterine origin.**

SUBJECTS for presacral neurectomy should be carefully selected. Patients with dysmenorrhea of ovarian origin are not candidates.

Often, ovarian pain can be distinguished from that arising in the uterus by the type of discomfort. Ovarian pain is localized to the sides, is aching in character, radiates down the thighs, appears before menstruation and ceases with onset of flow, and frequently is associated with nausea, dyspareunia, painful defecation, and syncope. Uterine pain is cramping or, at times, stabbing and usually begins with onset of flow and continues for a few hours or throughout menstruation.

In general, presacral neurectomy is recommended for [1] patients with dysmenorrhea that has persisted since the menarche despite prolonged conservative treatment, [2] patients with no pronounced pelvic disease, and [3] patients of any menstrual age in whom the uterus and at least a part of 1 ovary can be saved.

The operation should not be done for patients with anxiety complexes. These women may be benefited by psychiatric consultations. Differentiation of organic from psychogenic dysmenorrhea is facilitated by 2 tests. The first one utilizes suppression of ovulation by estrogens, with relief of primary dysmenorrhea associated with a functional corpus luteum. Pain persisting during the anovulatory cycle is assumed to be of psychogenic origin. The second test involves exploration of the uterine cavity with a probe. Elicited pain is considered uterine in origin.

At operation, a midline incision is made if the distance between the umbilicus and symphysis permits. If not, the incision is extended from the symphysis upward and to the left of the umbilicus. The posterior peritoneum is elevated with hemostats and incised downward to below the promontory of the sacrum and upward to the region of the aortic bifurcation.

All fine fibrils and other tissues are removed from the posterior aspect of the peritoneum. The left iliac vein and right artery are prominent in the field of operation, while the left artery usually lies beneath the descending colon.

Dissection is continued down to the area of the right iliac artery and right ureter, and the nerve and connective tissue are dissected from the medial aspect of these struc-

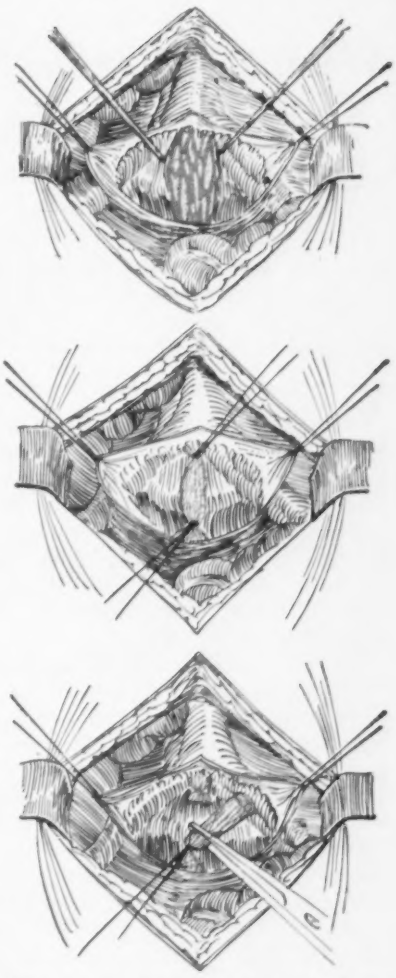
*Presacral neurectomy: report of 70 cases. South. M. J. 48:120-126, 1955.

tures, avoiding damage to the blood supply to the ureters and nerve supply to the bladder. A dissection on the left is begun at the margin of the sigmoid. If covered by the descending colon, the left ureter and iliac artery may be difficult to locate and separate.

The sheath containing the nerves is undermined from both sides toward the center. The sheath is then freed superiorly and inferiorly for about 1½ in., and 2 chromic sutures are placed beneath the plexus and drawn upward and downward until the sheath becomes tubular in shape. Wertheim clamps are applied at each end of the plexus, and, as the clamps are removed, the sutures are slipped into the pinched areas and tied. The intervening segment of the plexus is then excised (see illustration).

Nerve tissue from the right to the left side and down to the periosteum over the vertebrae should be sectioned. After bleeding is checked, the posterior peritoneum is closed with continuous chromic suture. In closure of the wound, long ends are left on the skin sutures, which are tied in 2 groups to aid removal with a single pull.

The operation was performed for 70 patients who were totally incapacitated for twenty-four hours or longer during each menstrual period. Of the group, 50 women had primary dysmenorrhea which had persisted since menarche; the other 20 patients had acquired dysmenorrhea. Of the 45 patients of the first group who were observed after surgery, 62% had complete relief of pain and 29% had partial relief. In the group with acquired dysmenorrhea, 16 patients were observed after surgery; 75% had complete relief and 19% partial.



The nerve plexus is elevated, drawn into a round bundle with traction sutures, clamped, sutured, and excised between the sutures.

Technic of Vaginal Hysterectomy

CAPT. LEWIS T. DORGAN, M.C., U.S.N., AND
CAPT. JOHN J. CARTER, M.C., U.S.A.
Tripler Army Hospital, Honolulu, and U. S. Naval Hospital, Chelsea, Mass.

Excellent anatomic and functional results in the treatment of relaxations of the pelvic floor can be achieved by vaginal hysterectomy.*

VAGINAL hysterectomy with repair of defective supporting structures often provides greater safety and comfort and a higher incidence of symptomatic relief than abdominal procedures. Increasing familiarity with the operative technic will encourage use of the operation in a larger number of patients.

Subarachnoid anesthesia supplemented with a small amount of Sodium Pentothal is preferred unless specifically contraindicated. The patient is placed in a dorsal lithotomy position with feet and legs suspended high by ankle slings. After anesthesia, the table is put in a 15-degree Trendelenburg position. No pressure is exerted on the calves, knees, popliteal spaces, or thighs.

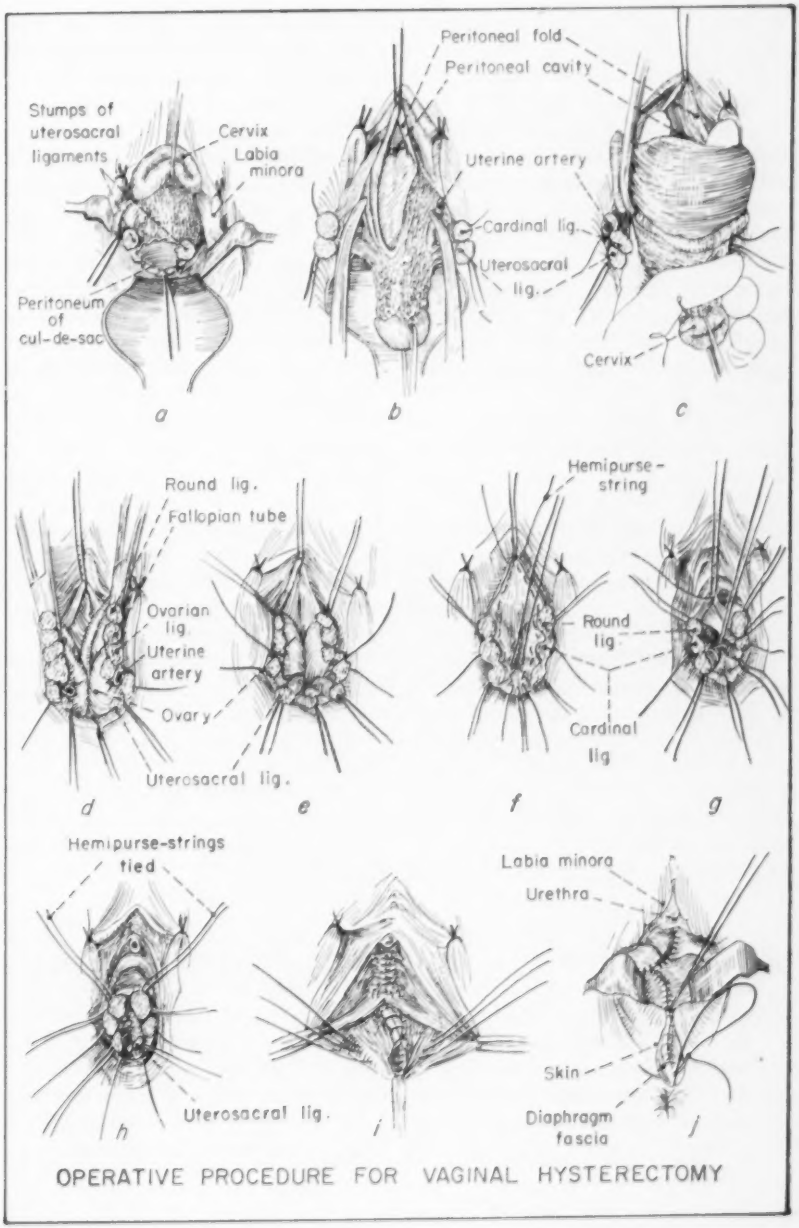
After dilatation of the cervix and curettage of the endometrium, both lips of the cervix are grasped with a tenaculum, and the cervix is held downward while a circumferential incision through the mucous membrane is made around the junction of the vaginal wall with the cervical mucosa. The mucosa is freed in all directions for 3 cm., exposing the cervical ends of the uterosacral and cardinal ligaments, the peritoneum of the cul-de-sac, and the vesicocervical fascia or ligament. The peritoneum of the cul-de-sac is incised from one uterosacral ligament to the other and sutured to the mucosal edge with 3 interrupted sutures to stop the bleeding from the posterior parametrium. The uterosacral ligaments are clamped, severed, ligated, and tagged for traction and identification (Fig. *a*).

With the cervix pulled downward, the vesicocervical fascia is incised transversely and the bladder pillars are stripped back from the cardinal ligaments with a gauze-covered finger. The cardinal ligaments are then clamped, divided, and ligated just short of the vascular bundle. Opening the anterior peritoneal fold permits good exposure of the uterine arteries and veins, which are divided and doubly ligated (Fig. *b*).

The uterus is cut free and removed after division of the round ligament, the fallopian tube, ovarian ligament, and remnants of the broad ligament on each side (Figs. *c*, *d*). Round ligaments are tagged for identification and traction.

To prevent prolapse of the vault

*Vaginal hysterectomy. Am. J. Obst. & Gynec. 69:320-332, 1955.



OPERATIVE PROCEDURE FOR VAGINAL HYSTERECTOMY

or later recurrence of symptoms, sutures are placed in the uterosacral ligaments as far back in the pelvis as possible, usually 5 cm. from the cut ends (Fig. *e*); 2 hemipurse-string peritonizing sutures are placed near the peritoneal margins, effectively closing the peritoneal cavity (Fig. *f*).

Sutures coapting the uterosacral ligaments are not tied until the peritonizing sutures are in position (Fig. *g*). The uterosacral traction sutures are then tied to each other and cut (Fig. *h*).

The left cardinal ligament is sutured into the left lateral angle of the vaginal vault, tied on the mucosal side, and held; the right is similarly treated. If any redundancy of the anterior wall is noted, the anterior mucosa is freed in a superficial plane leaving all the vesical fascia on the bladder. The dissection is carried forward to within 5 mm. of the external urinary meatus and laterally to free the entire bladder base and both lateral walls of the urethra. Interrupted Lembert sutures are used to repair the fascial defect under the urethra. Traction sutures on the round ligaments are tied together, making a sling under the bladder fascia. The excess mucosa is trimmed off and the anterior wall closed with interrupted No. 00 catgut sutures, every third one catching the underlying fascia.

The posterior repair extends the full length of the vaginal wall. Again a shallow submucosal dissection is made so that the pararectal fascia is preserved as a distinct layer over the anterior rectal wall. After a running, locked stitch is taken in the posterior vaginal wall from above downward (Fig. *i*), the pubococcygeal portions of the levator ani muscles are approximated with 3 interrupted sutures. A crown stitch is taken in the sphincter cunei, and the diaphragmatic fascia is closed with a running stitch which is reversed as a continuous subcuticular stitch and tied to the crown stitch (Fig. *j*). This completes the operation.

A Foley catheter is maintained in the bladder seventy-two hours postoperatively. Terramycin, 500 mg. in a glucose solution, is given intravenously every twelve hours until the patient can take oral doses of 500 mg. every six hours. Ambulation is begun on the second postoperative day.

¶ ASYMPTOMATIC ENDOMETRIAL TUBERCULOSIS may respond quickly to treatment with streptomycin. Negative biopsies were obtained in 15 patients given 1 gm. of the drug daily for forty days, but Masamichi Suzuki, M.D., of the Laboratories of the Atomic Bomb Casualty Commission, Hiroshima, Japan, observed that 6 women had relapse within two years, while 9 patients remained apparently cured. Pregnancies occurred in 2 women after therapy; 1 was ectopic and the other terminated in spontaneous abortion.

Obst. & Gynec. 5:142-149, 1955.

SPECIAL EXHIBIT

CHLORPROMAZINE IN THE MANAGEMENT OF PAIN

MAX S. SADOVE, M.D., RAYMOND F. ROSE, M.D.,
REUBEN C. BALAGOT, M.D.,
AND ROSAURO REYES, M.D.

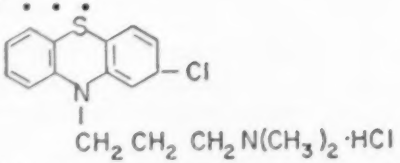
University of Illinois,
Chicago

"Less narcotics . . . less potent narcotics needed"

A summary of laboratory and clinical experience using chlorpromazine to augment the action of narcotics, sedatives, anesthetics, and various other drugs.

A Modern Medicine Exhibit adapted from a presentation made at the Clinical Session of the American Medical Association in Miami.

Pharmacology . . .



10-(3-dimethylaminopropyl)-2-chlorphenothiazine hydrochloride

CHLORPROMAZINE is a nonbarbituric central nervous system depressant which has proved to be of clinical use in:

- 1. Nausea and vomiting due to various causes
- 2. Mental and emotional disturbances
- 3. Pain
- 4. Potentiated anesthesia

PROPERTIES . . .

established in man:

- Depresses motor activity
- Depresses autonomic centers
- Dilates peripheral vessels
- Potentiates relaxants
  - at internuncial pool
  - at myoneural junction
- Depresses emetic mechanism
- Depresses heat-regulatory mechanism (nonspecific)
- Intensifies and prolongs action of analgesics and sedatives
- Lowers blood pressure
- Increases pulse rate

established in animals:

- Abolishes conditioned reflex
- Inhibits response to epinephrine (adrenolytic)
- Inhibits ventricular fibrillation
- Increases pulse rate

In Clinical Use . . .

Chlorpromazine, although not analgesic per se, augments the action of narcotic analgesics and often helps to relieve pain when narcotics alone have failed.

TECHNIC

Chlorpromazine was given to 28 patients with chronic, severe abdominal, bone, or neuritic pain inadequately relieved by large or increasing doses of narcotics. The narcotics were continued in approximately one-half the former dosage. Of the patients, 18 were hospitalized and 10 were outpatients.

DOSAGE

Initial: 25 mg. orally or intramuscularly two to four times daily

Maintenance: 50 mg. orally two to four times daily

RESULTS

The following case histories show typical reductions in narcotic requirements with chlorpromazine

Case history 1

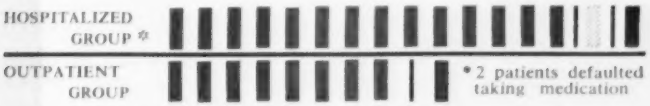
This hospitalized patient, who required 5 mg. of Dromoran every two to three hours daily to relieve pain of gastric carcinoma, became bedridden with pronounced drowsiness. When 50 mg. of chlorpromazine was administered intramuscularly every four hours daily, analgesia was satisfactory with 50 mg. of Demerol every three hours daily, and the patient resumed semiambulatory status. The last ten days, ½ gr. of codeine was adequate.

Case history 2

Demerol was required in a dosage of 100 mg. every two to four hours daily to control severe bone and neuritic pain of this outpatient. With administration of 25 mg. of chlorpromazine orally and 25 to 50 mg. of Demerol, bone pain was almost completely relieved, sharp neuritic pain seldom occurred, and the patient slept comfortably for the first time in several weeks.

ANALGESIA OBTAINED *with smaller doses of narcotics*

■ *equal or better* ▒ *fair but less* ■ *none*



CHLORPROMAZINE proved to be a potent antiemetic agent in 6 patients: control of nausea was good in all patients, and control of vomiting was good in 5 and fair in 1.

PATIENTS seemed more relaxed and cheerful and less reactive to pain. Some subjects reported that pain was still present but was tolerable.

SIDE EFFECTS

Drowsiness—*11 patients*	Pyrosis—*2 patients*
Dry mouth—*9 patients*	Dyspnea—*2 patients*
Hypotension—*2 patients*	Oliguria—*1 patient*
Palpitation—*2 patients*	Ataxia—*1 patient*

Disturbed sensorium—*1 patient*

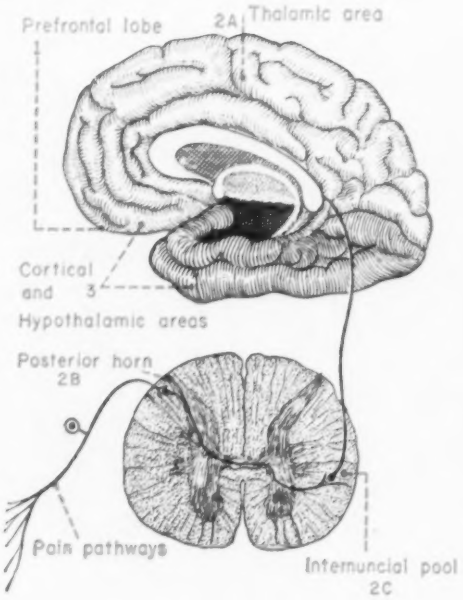
The drug should not be used with comatose states caused by barbiturates, opiates, alcohol, or other central nervous system depressants.

Possible Mode of Action . . .

Chlorpromazine does not alter the threshold to pain but is useful in the management of pain by means of 3 mechanisms.

- 1. The drug produces a lobotomy-like effect that reduces reactivity to pain.
- 2. The drug probably alters synaptic activity in the thalamic area (*a*) and the spinal cord (*b, c*).
- 3. The drug augments the action of narcotics by an unknown mechanism.

The observed action of chlorpromazine on the central nervous system occurred chiefly at the cortical and hypothalamic levels.



Summary and Conclusions . . .

data from experiments on rabbits

- 1. Chlorpromazine potentiates the depressant action of all barbiturates on the central nervous system.
- 2. Chlorpromazine may potentiate the depressant action of the opiates and the synthetic analgesics on the central nervous system.
- 3. Chlorpromazine, plus barbiturates, opiates, or synthetic analgesics, causes a profound depression lasting twelve to thirty-six hours, even after electroencephalograms have become normal.
- 4. Chlorpromazine administered with thiobarbiturates causes a marked fall in temperature of 8 to 10° F.; with short-acting barbiturates, a slight fall of 2 to 3° F.; and with opiates and synthetic analgesics, no fall in temperature.
- 5. Chlorpromazine alone causes priapism in male rabbits.
- 6. The possible site of action and mechanism of potentiation is in the ascending reticular pathways of Magoun, including the thalamic areas, where the barbiturates also act.

Hypertension During Childhood

DERMOD MAC CARTHY, M.D.
Oxford Regional Hospital Board, England

*Treatment with hypotensive drugs may be lifesaving for a child with high blood pressure.**

ACCURATE blood pressure readings are necessary for recognition and care of hypertensive children. Variations in the size of the cuff relative to the size of the arm and in compressibility of soft tissues must be considered.

If a cuff is too wide, readings are falsely low. The proper cuff covers two-thirds the length of the arm. At least 3 sizes should be available: a 9-cm. cuff for older children, a 5-cm. cuff for patients under four years of age, and a 2.5-cm. cuff for newborn infants. A wider cuff is required for diastolic measurement.

The average systolic pressure is 100 mm. of mercury for a five-year-old child when a 9-cm. cuff is used or for an infant when a 5-cm. cuff is substituted. Low levels were probably previously reported for babies because too wide cuffs were employed. After puberty, pressure rises to 120 mm. Systolic pressures at intervening ages may be gauged accordingly.

Readings are reliable only if made when the child is comfortable. Measurements should be repeated on several occasions by the same person. Cuff size is recorded with the reading. A level consistently 20 mm. of mercury higher than expected is a sign of hypertension.

Hypertension is probably always associated with *acute nephritis* but may be transitory. The increase in blood pressure is part of a generalized reaction of arterioles to a noxious influence. Since about 1 in 30 children with acute glomerulonephritis eventually have chronic renal failure and hypertension, blood pressure readings should be recorded and serial urinalyses done long after symptoms subside.

Chronic kidney disease with hypertension during childhood usually is the result of pyelonephritis or interstitial inflammation, which is generally caused by congenital anomalies of the urinary tract. Polycystic kidneys, occlusion of a renal artery or vein, lower nephron nephrosis, and bilateral cortical necrosis are other possibilities.

Unilateral renal disease caused by congenital hypoplasia of the kidney or the renal artery or by pyelonephritis should be suspected when the origin of hypertension is not evident, especially if the child has retinopathy, convulsions, headache, and extremely high diastolic pressure. Nephrectomy is successful in only half of instances, probably because of secondary involvement of the other kidney.

*Hypertension in childhood. Practitioner 174:160-169, 1955.

Acute hypertensive encephalopathy may occur in any child who has sudden or severe elevation of blood pressure. Convulsions, pareses, cranial nerve palsies, blindness, mental confusion, or aphasias may occur. Cerebral symptoms are probably caused by ischemia after spasm of arterioles. In lead intoxication, most of the symptoms and tissue changes are attributable to the hypertensive state and damage to small vessels rather than to a direct toxic effect of the metal.

Anaphylactoid purpura is common among children and should be considered in every instance of hypertension or chronic nephritis. The main features are edema, erythema, purpura, and abdominal and renal symptoms.

Essential or malignant hypertension is rare before puberty but may affect even infants. Hypertension is gross. Renal failure is usually secondary. With malignant hypertension, papilledema and neuroretinitis reflect increased intracranial pressure. Exacerbations and remissions occur, and life expectancy is only a few weeks or months if treatment is not instituted.

With *polyarteritis nodosa*, high blood pressure is probably secondary to renal ischemia.

Children with acrodynia, congenital heart lesions, high intracranial pressure, endocrine disturbances, or obesity may have increased blood pressure, but hypertension is not necessarily responsible for the symptoms.

Rest is essential in treatment of hypertension. Sedation is advisable, especially if convulsions are threatening. Therapy is instituted for concomitant kidney disease.

Hypotensive drugs may improve renal function as well as reduce blood pressure. Ganglion-blocking agents, such as hexamethonium compounds, or centrally acting Rauwiloid or Veriloid may produce striking results. Dosage must be individually adjusted. Maintenance therapy is usually prolonged.

Migraine Headaches During Childhood

JEROME GLASER, M.D., UNIVERSITY OF ROCHESTER, N. Y., reports that children of all ages may be affected by migraine headaches. The incidence among children is about 1%.

Languor, anorexia, abdominal discomfort, sleep disturbances, or fever frequently heralds the attack. Behavior disturbances, sensory changes, facial edema, anxiety, and cardiac symptoms may appear. The headache is less likely to be unilateral than in adults and scotomas occur less commonly. In infants, headache may be suggested by crying, rubbing of the head, and wrinkling the forehead. The attack usually culminates in nausea and vomiting.

In some instances, childhood migraine has an allergic origin. Elimination diets usually stop the migraine attacks.

Migraine in pediatric practice. Am. J. Dis. Child. 88:92-98, 1954.

Cerebral Palsy: Preschool Training

HARRIET E. GILLETTE, M.D.
Georgia State Department of Health, Atlanta

*Accurate evaluation, realistic objectives, and a well-rounded living and treatment program aid the cerebral palsied child to perform to his greatest capacity.**

Persons with cerebral palsy may enter into one of three types of life. For the minority of children able to enter the field of academic education and employment, emphasis should be laid on the skills of reading, communication, and abstract thinking. Intense training in coordination activities is also of importance.

The second, larger group profits most from an occupational education not requiring abstract thinking. These individuals benefit from training in following directions, social independence, and gross activities.

For children unable to contribute to society because of severe mental and physical trauma, the objective is to make good institutional citizens or to lessen the burden of care in the home. Self-care education with training in dressing, toilet, ambulation, and behavior control is important.

If brain damage has left intact only the vegetative centers, no form of treatment is required. Only nursing care with prevention of contractures to maintain good hygiene is needed.

The training program begins with the resolution of the parent's emotional problems. Counseling by the physician, social service worker, minister, teacher, or therapist is often needed. Intensive psychiatric treatment may be required. The physician should explain the results of the evaluation, the objective set, and the general principles of treatment in terms understandable to the parent.

The social phase of training is the most important to the child, because success as an adult depends on a pleasing personality. Training in emotional control and group living should proceed concurrently with opportunities for personality development and the assumption of responsibility.

All persons in contact with the child should encourage the faculty of speech. Natural mother-and-child play forms the basis for a good functional program, with imitations of lip and tongue movement, vocalization, story telling, and picture identification.

A rigid program of definitive speech therapy is not started before language has a natural free flow. Then, all efforts are directed toward making speech intelligible, using a combination of exercise of the mus-

*Preschool training for cerebral palsy. Arch. Phys. Med. 36:31-34, 1955.

cles of speech and respiration, articulation training, and amplification if indicated.

The principles of motor training include [1] maintenance of a good mechanism which can be used as the directive force appears and [2] encouragement and strengthening of muscles and reflexes in order to achieve the greatest amount of function.

Training should be accomplished in a natural manner and the child should not be made to feel that exercises are the main purpose of living. The developmental activities by which normal children learn to stand, walk, and climb can be adapted to the child with cerebral palsy.

Rolling, hand-and-knee standing, knee standing, crawling, and free play on the floor activate and strengthen muscle groups which lie dormant during passive exercise. Specific exercises and stretching are given as needed.

Training in self-care, especially independence in toilet use, is a primary objective when possible.

The prevention of deformity is one of the chief concerns of the preschool years, and parents should be given instruction regarding good habits of sitting and standing posture. The reverse tailor position may contribute to knock-knee and should never be allowed. Chairs and work tables should be adjusted to the size of the child.

Standard educational toys as well as the ordinary articles in the home, such as kitchen implements and spools, are well adapted for gross hand activities of the preschool child.

Training in the sensory phase may require special attention. Correction of visual and hearing defects can produce great changes in the outlook of the child. A variety of experiences with sights, sounds, textures, weights, and temperature should be provided. Rhythm training may be given through records, metronome, marching, and hand clapping.

Conceptual instruction in form matching, color matching, space and quantity concepts, and copying will prevent many problems encountered in the primary grades.

¶ URINARY TRACT INFECTIONS occurring after prostatectomy may be treated effectively with nitrofurantoin (Furadantin) when *Escherichia coli* and *Bacillus proteus* are the causative organisms. John W. Draper, M.D., and associates of Cornell University and Bellevue Hospital, New York City, observe that sterile urines were obtained in nearly half of 45 patients. The drug was less effective against mixed pathogens including *Aerobacter aerogenes* and *Pseudomonas aeruginosa*. The compound was of little benefit in 3 individuals with gonococcal urethritis. Moderate eosinophilia occurring in 17 patients and skin rashes appearing in 3 subsided when treatment was stopped.

J. Urol. 72:1211-1217, 1954.

Prostatic Cancer Involving the Rectum

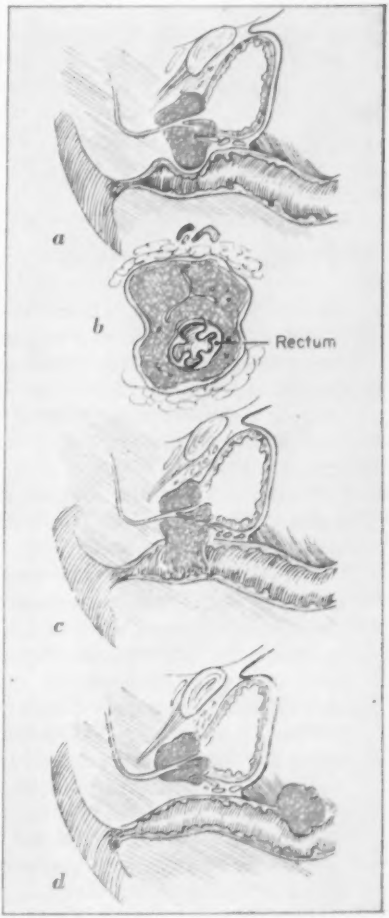
CHESTER C. WINTER, M.D.
University of California Medical Center, Los Angeles

*When carcinoma of the prostate invades the rectum, castration combined with estrogen administration is often the most effective therapy.**

ALTHOUGH cancer of the prostate occurs in 20% of men over 55 and is the cause of death in 5% of white men over 50, the frequency of rectal extension is unknown. However, since prostatic carcinoma usually arises in the posterior lamella of the gland, the incidence would probably be considerable if Denonvilliers' fascia did not act as a barrier to the rectum.

Patients with carcinoma of the prostate involving the rectum can be classified into 4 groups: [1] those with lesions occluding the rectal lumen (Fig. *a*); [2] those with stenosing, annular, perirectal lesions (Fig. *b*); [3] those with disease invading the rectal mucosa (Fig. *c*); and [4] those with separate metastasis to the rectosigmoid (Fig. *d*).

Biopsy material provides the only indisputable diagnosis and may be obtained by transurethral resection, open perineal excision, open suprapubic operation, transrectal biopsy, and bone marrow aspiration. Serum acid phosphatase levels are usually elevated with invasive prostatic cancer, generally in proportion to the extent of dissemina-



Classification of prostatic lesions which extend to the rectum

*Prostatic carcinoma involving the rectum. California M. J. 82:85-90, 1955.

tion. Tissue assays and special stains with affinity for acid phosphatase in biopsy specimens will reliably exclude prostatic cancer when the content is low. A high content, however, does not invariably signify malignant disease.

Cytologic study of the prostatic secretion and urinary sediment may be helpful when made by an experienced examiner. Roentgenologic survey of the bones is good for diagnosing metastatic carcinoma, but occasionally Paget's disease or other bone lesions will cause difficulty in the differential diagnosis. A rectal shelf produced by silent gastric cancer can also obscure the diagnosis.

When carcinoma invading the rectum or rectosigmoid is diagnosed as originating in the prostate gland, estrogen therapy is begun immediately, and castration is performed. Cancer of the prostate in the advanced state is incurable, and radical pelvic operations are unwarranted.

Primary Interstitial Cystitis in Men

WILLIAM J. BAKER, M.D., ST. LUKE'S HOSPITAL, AND EDWIN C. GRAF, M.D., COOK COUNTY HOSPITAL, CHICAGO, believe that primary interstitial cystitis should be suspected when bladder symptoms persist more than three months after transurethral resection. The disease probably existed before prostatectomy was performed but was overlooked when the disease of the bladder neck was discovered.

Primary interstitial cystitis involves the bladder mucosa, submucosa, and muscularis. The inflammation is patchy in distribution, and etiology is unknown.

Symptoms are similar to those of fibrous prostatic gland sclerosis. Patients have frequency, nocturia, urgency, and suprapubic pain. Pain is severe when the bladder is distended. Bladder capacity is decreased. Microscopic hematuria is sometimes evident, but results of urine examination may be negative. Cystoscopic study shows isolated, sharply demarcated red areas on the bladder wall. Linear bleeding ulcers occur when the bladder is overdistended. Lesions are found most frequently in the dome of the bladder. Uninvolved portions are completely normal.

Though uncommon in men, the disease was diagnosed in 7 males from 41 to 69 years of age. All had had prolonged therapy for other genitourinary disorders, and prostatic resection had been performed for 6 of the patients.

The primary disease should not be confused with secondary interstitial cystitis, which results from longstanding pyogenic infection of the bladder.

Interstitial cystitis: a cause of persistent bladder disability. J. Urol. 72:646-649, 1954.

Treatment of Cryptorchidism

ROBERT J. PRENTISS, M.D., RALPH B. MULLENIX, M.D.,
JAMES M. WHISENAND, M.D., AND MICHAEL J. FEENEY, M.D.
San Diego

*Surgery for undescended testis is best done just before puberty and should be preceded by a course of chorionic gonadotropin.**

BEFORE beginning treatment for undescended testis, several careful examinations of the child are advisable to exclude hypoplasia of the cord and testis, ectopic testis, and alternating cryptorchidism. Trusses should not be advised for patients with hernia.

MEDICAL THERAPY

Chorionic gonadotropins are given at 6 years of age and again at 12 years. Intramuscular doses of 300 to 500 I.U. are administered two or three times weekly for a total of 3,600 to 9,000 I.U. No more than 2 courses are given.

Such therapy does not cause descent of the testis but is utilized to aid genital growth, to enlarge local structures, and to improve the blood supply preoperatively. Precocious puberty has not been encountered, but careful observation for such an occurrence should be maintained.

Intramuscular injections of testosterone propionate, 25 to 50 mg. twice weekly, are given for hypogenitalism if the gonadotropins are ineffective. The treatment is discontinued at the time of surgery. If bilateral testicular hypoplasia or agenesis is found at operation, maintenance doses of testosterone are started at puberty.

SURGICAL THERAPY

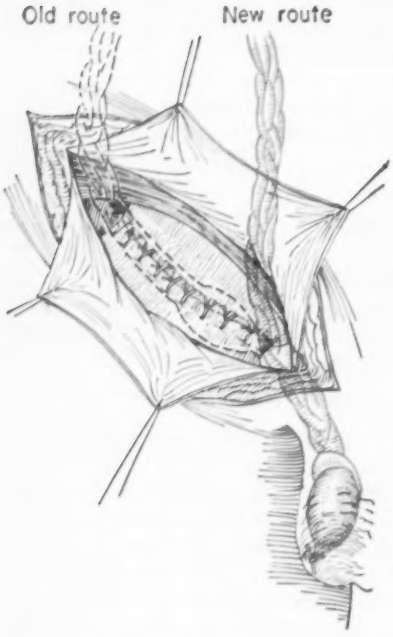
Orchidopexy is performed when the child is 10 to 12 years of age. By this time, spontaneous descent, if possible, will have occurred and, if not, genitals will have increased sufficiently in size to facilitate the operative procedure.

At surgery, the external oblique fascia is opened, and the ilioinguinal nerve is isolated. The cord and sac containing the testis are elevated and the sac is freed from above in order to avoid branches of the ilioinguinal nerve. After a scrotal pouch is formed, the internal oblique muscle is retracted at the internal inguinal ring, and the spermatic cord is freed retroperitoneally with good definition of the lateral edge of the transversalis fascia at the internal ring.

The peritoneum is reflected upward from the transversalis, and the transversalis fascia is incised from the pubis to internal ring. The deep epigastric vessels are divided.

After the hernial sac is opened, the peritoneum is dissected from

*Medical and surgical treatment of cryptorchidism. Arch. Surg. 70:283-290, 1955.



Transference to the external ring increases the length of the cord by eliminating 2 sides of the spermatic triangle.

the cord. The hernial sac is closed, and a deep retroperitoneal dissection is done. The peritoneum and anterior abdominal wall are retracted, and the cord and testis are shifted to the external ring (see illustration).

Distal coverings of cord to testis are removed, and the tunica albuginea of the lower testicular pole is pierced with No. 1 absorbable chromic gut suture; the 2 ends are brought out through the lowest part of the scrotum and sutured to the skin of the thigh or fixed with rubber-band traction.

After closing the transversalis fascia, the conjoined tendon and internal oblique fascia are sutured to the shelf of Poupart's ligament. The external oblique fascia and the scrotal entrance are closed.

The fixation suture releases spontaneously in six to ten days. If cryptorchidism is bilateral, surgery is done on the other side about a week later.

Sexual Function of Paraplegic Men

HERBERT S. TALBOT, M.D., VETERANS ADMINISTRATION HOSPITAL, WEST ROXBURY, MASS., reports that sexual activity is maintained in most paraplegic male patients. Endocrine and psychic dysfunctions are apparently secondary. These factors are not greatly altered by spinal cord injury if the patient is in good physical condition and if the disabling components are evaluated and treated.

Sterility results from obstruction of the genital passages, neuromuscular dysfunction, or failure of spermatogenesis.

Of 408 paraplegic patients studied, about two-thirds were capable of having erections, usually reflex in character. However, erections were also evoked by psychic stimulation in about one-third of these subjects. The function was usually restored within six months after the injury. About 5% of the men were fertile.

The sexual function in paraplegia. J. Urol. 73:91-100, 1955.

Conservative Surgery for Fractures

H. EARLE CONWELL, M.D.
Conwell Orthopaedic Clinic, Birmingham, Ala.

*In most instances, early fractures can be adequately treated by conservative surgical measures.**

METHODS of treating fractures are rapidly changing but the basic principles still apply. Frequently, unorthodox treatments retard rather than assist recovery. Unnecessary pins, screws, nails, nuts, bolts, and plates may interfere with the orderly process of repair. Internal fixation, when definitely indicated, will bring about early recovery and better function but must not be used as a panacea for all fractures.

Occasionally multiple screws and a bone plate are used for closed fractures of the lower third of the tibia. Such massive overtreatment may prevent union, require later bone grafting, and result in pronounced disability of the foot and ankle, whereas simple insertion of a few screws is usually adequate and will yield consistently good results. Similarly, attempts to treat fractures of the lower humerus by open reduction with screws and plates may produce ischemic paralysis of the forearm with total disability of the hand, forearm, and elbow. Fractures of the lower humerus are best treated with simple closed reduction.

Fractures of the middle and upper thirds of the femur in young persons are too often treated with internal fixation, bone plates, Parham bands, or medullary nails, none of which is usually required. Intramedullary nailing particularly is overused for all types of fractures. Shaft fractures of the femur heal very well after skeletal traction through the upper one-fourth of the tibia combined with a plaster spica. Skeletal traction also suffices for most fractures through the lower and upper thirds of the tibia and fibula.

Most fractures and fracture dislocations about the ankle should be reduced with closed methods only and external fixation obtained by means of a circular cast. Internal fixation is rarely necessary.

Early closed manipulation and traction will give excellent results in severe, comminuted, depressed fractures of the acetabulum. Reduction is accomplished by traction to the right leg with countertraction over the left hip and pelvis. Skeletal traction is applied through the lower third of the femur.

Spinal fusion should seldom be combined with excision of herniated intervertebral disks. The discomfort from low back disability is often much less severe than the pain that frequently arises from unjustified spinal fusion.

*Conservative surgery in fracture treatment. West. J. Surg. 63:31-36, 1955.

Traumatic Finger Amputation

CARL E. NEMETHI, M.D.
Los Angeles

*Finger length can be conserved and disability lessened by immediate skin grafting instead of reamputation in instances of traumatic phalangeal amputation.**

FREQUENTLY, traumatic phalangeal amputation, a prime cause of time loss and permanent disability in industry, is treated by reamputation. However, removal of a phalanx or a portion of a phalanx because of traumatic amputation is unsound. The length of the digit should not be sacrificed to facilitate primary closure of the wound.

The use of a thick split-skin graft allows the greatest possible finger length to be conserved. The method does not replace use of the flap, tubed pedicle, or full-thickness graft when specific injuries indicate such technics. However, about 90% of hand trauma requiring grafting can be treated by application of thick split-skin grafts.

Advantages of the method include simplicity, rapid covering of wounds, and lack of secondary complications. Hospitalization is not required, and healing is uneventful. Since only the injured digits are restricted in motion, most patients can return to activity the day after injury.

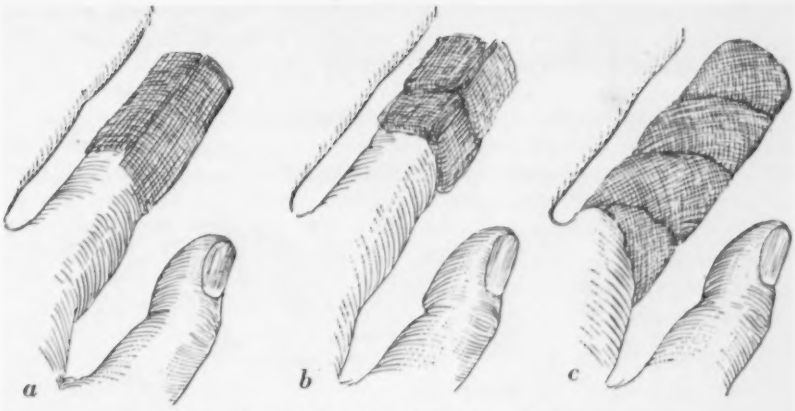
The technic is not complicated. The injured extremity is scrubbed to the elbow with bactericidal soap for ten to fifteen minutes. If anesthesia is needed, a digital nerve block with 2% Novocain augmented by 100 mg. of Demerol is employed. Novocain is also infiltrated subcutaneously into the donor area on the volar surface of the forearm.

The extremity is draped and prepared for surgery in the usual manner, with the forearm bare to the elbow.

Meticulous debridement is done in a bloodless field. Volar digital nerves are pulled down and resected so that the proximal ends lie beneath a cushion of soft tissue. Volar arteries are clamped and tied with No. 000000 plain catgut. Only enough bone to permit soft-tissue coverage is removed with a rongeur. Shifting of soft tissue is done by mobilizing fragments, strips, and bridges of subcutaneous tissue over the bone.

The skin graft is cut while capillary bleeding is being stopped with direct gauze pressure. Special knives or dermatomes are not necessary. The graft is removed with sawing motion of a scalpel. The edges of the grafted segments are permitted to overlap each other

*Phalangeal amputations: treatment by immediate skin grafting. Indust. Med. 23:444-447, 1954.



Bandaging the unsutured grafts

and the normal skin area by about ⅛ in.

Sutures are not used, even for large areas, thus reducing operating time and producing better results. The graft is thereby permitted to retract normally and conform to the small irregularities of the soft-tissue bed.

The grafts are fixed with 1-in. strips of gauze which are saturated with a preparation of 50% petrolatum and 50% Furacin and laid smoothly over the graft and carried proximally to the normal skin (Fig. *a*).

Fluffs of sterile gauze are placed over the medicated gauze (Fig. *b*). Pressure is applied with a stockinet bandage 2 in. wide cut on the bias (Fig. *c*). Only the injured finger is included in the bandage; plaster immobilization is never used.

Bandages are removed in seven to ten days, and dressings are changed two or three times a week. Necrotic areas are removed and serum blebs drained. In about three weeks, whirlpool therapy can be started, and in six to eight weeks the patient may be discharged from medical care.

¶ TREATMENT OF NARCOTIC ADDICTION with chlorpromazine and barbiturates may prevent or reduce withdrawal symptoms. G. H. Aivazian, M.D., of the University of Tennessee, Memphis, reports that all of 21 drug addicts given this modified sleep therapy were ambulant and asymptomatic within a week and were more amenable to psychotherapy than patients given other regimens. Backache was the only persistent symptom but was alleviated by acetylsalicylic acid. No toxic effects or complications were observed.

Dis. Nerv. System 16:57-60, 1955.

Sources of Brain Abscess

E. A. STUART, M.D., F. H. O'BRIEN, M.D.,
AND W. J. MC NALLY, M.D.
Royal Victoria Hospital and the Montreal Neurological Institute, Montreal

*Infectious disease of the middle ear is the most frequent cause of pyogenic brain abscess.**

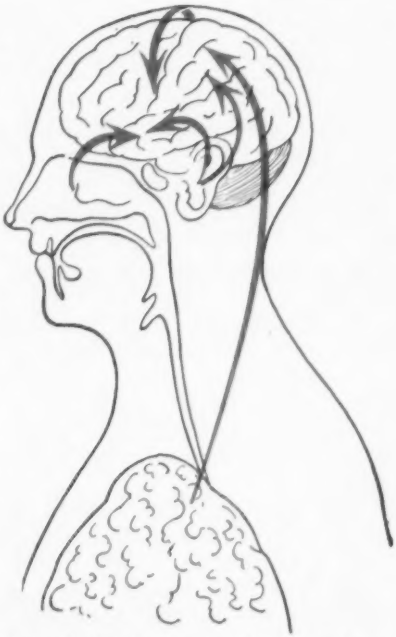
MOST intracranial abscesses are complications of infections near the brain. Proximate loci of brain suppuration are otitis media and mastoiditis, paranasal sinusitis, and osteomyelitis of skull and infection of related soft parts.

Otitis media with mastoiditis, the commonest source, spreads to the cerebral hemispheres twice as often as to the cerebellum. The complication occurs more often with chronic than with acute otitis.

Intracerebral abscess is generally located in the temporal lobe contiguous with the site of primary infection but may be in the contralateral hemisphere or bilateral.

Direct extension of an infection from ear to cerebellar lobe may be demonstrated with otogenous intracerebellar abscess. The internal auditory canal or the sheath of the eighth nerve may contain pus.

Paranasal sinusitis with osteomyelitis is the second most frequent source of intracranial abscess. In contrast to middle ear disseminating loci, primary infection is acute. Brain suppurations were associated in 20 of 350 patients with acute paranasal sinus infections.



Spread of infection to the brain from the middle ear, paranasal sinus, dura, and lung

Spread is generally from the frontal sinus and is contiguous to the frontal lobe, though adjacent cerebral territories may also be involved. Occasionally, abscess occurs after sphenoidal or sphenoidal and ethmoidal sinusitis.

*Some observations on brain abscess. Arch. Otolaryng. 61:212-216, 1955.

Brain abscesses that occur after osteomyelitis of the skull are generally located immediately below the original infection.

Supratentorial brain abscesses may be disseminated from remote loci, generally the lungs. Since the lesions are in the cerebrum, and the cerebellum and brain stem are not affected, metastasis is probably by the carotid circulation.

Signs of intracranial suppuration include oculomotor palsies, papilledema, aphasia, stupor, monoparesis or hemiparesis, pointing errors, hemiataxia, unilateral dysmetria, and coarse nystagmus. Meningitis may occur before or in association with the abscess.

Generalized or focal convulsions suggest supratentorial involvement. Rapid increase of intracranial pressure may be the first manifestation. Supra- and infratentorial involvement occasionally occur simultaneously after middle ear infection.

Sometimes evidence of cerebral involvement, including seizures that affect chiefly the face and arm, hemiparesis, aphasia, and signs of meningeal irritation, accompanies ear infection or sinusitis when an abscess is not demonstrable. In such instances, therapy probably prevents extension of infection and brain suppuration, and cerebral venous thrombosis or thrombophlebitis produces the neurologic disturbances. The increased incidence of cerebral venous thrombosis may be related to use of antibacterial agents.

Thoracic Intervertebral Disk Protrusions

HENDRIK J. SVIEN, M.D., AND ANDREW LEE KARAVITIS, M.D., MAYO CLINIC, ROCHESTER, MINN., report that myelographic examination with Pantopaque usually detects a filling defect in patients with protruded thoracic intervertebral disks. However, neither narrowing of the disk spaces nor calcification within the disks is diagnostic, although calcification in either the involved or an adjacent disk is frequently seen and is of some significance.

Protrusion apparently is a degenerative process, and trauma is seldom involved in the etiology. The lesion occurs most frequently in males in the middle and late age groups.

Symptoms vary, depending on position of the disk in relation to the spinal cord and nerve roots as well as the level of protrusion. With involvement of the first thoracic root, pain projects down the inner aspect of the arm to the little finger. With lower thoracic nerve involvement, pain is projected to the abdomen and groin, and the abdominal reflex may be absent. Tenderness or pain may be elicited by percussion over the involved sites. With central thoracic disk protrusion, pain may be inconstant.

Multiple protrusions of intervertebral disks in the upper thoracic region: report of case. Proc. Staff Meet., Mayo Clin. 29:375-378, 1954.

Scoliosis after Poliomyelitis

ROBERT L. BENNETT, M.D.
Emory University, Ga.

*Early recognition and treatment of all the factors leading to persistent faulty alignment of the spine afford the only real hope for prevention or control of scoliosis after poliomyelitis.**

Of all the skeletal deformities that may occur after acute anterior poliomyelitis, scoliosis is the most serious threat to functional activity and even to life. The causes are manifold, and early recognition is difficult. Correction after structural changes have taken place is impossible.

The chief factors leading to scoliosis include:

1] Primary disturbances in vertebral growth centers and preexisting congenital defects
2] Weakness and/or contracture of the intrinsic spinal musculature
3] Changes in length and resilience of periarticular supportive tissues
4] Abdominal muscular weakness, especially unilateral or asymmetric
5] Weakness and/or contracture of the extrinsic spinal musculature, especially the quadratus lumborum, iliopsoas, and latissimus dorsi
6] Asymmetric weakness of the sternocleidomastoid
7] Asymmetric flexion-abduction contracture of the hip
8] Asymmetric shoulder girdle weakness
9] Asymmetric loss of muscle bulk at the hip and thigh
10] Difference in length of legs
11] Miscellaneous causes, such as faulty habit patterns, dominant handedness, and differences in vision and hearing.

Early lateral deviations of the spine may be grouped into 4 types. These are not always seen in pure form, and various combinations or degrees may coexist.

Type I (Fig. 1) occurs in the lumbar region and is characterized by lateral tilting or shifting of L5 on S1, L4 on L5, or both. Early detection depends on recognition of unilateral loss of mobility or excessive mobility in the lumbosacral region.

The cause is not always apparent even after thorough physical and roentgenographic examinations. Underlying congenital defects in this region are commonly found. Any of the first 5 causative factors listed, together or in combination, may be seen. Chief accelerating factors include asymmetric contracture of the iliotibial fascia and unilateral loss of muscle bulk in the hip and thigh.

Therapy should include specific stretching of the iliolumbar region on the side of the acute angle and restriction of sitting and standing positions. Corsets, jackets, and braces do not help prevent progression of the primary curve but may lessen formation of the secondary curve in the dorsal region.

*Classification and treatment of early lateral deviations of the spine following acute anterior poliomyelitis. Arch. Phys. Med. 36:9-17, 1955.

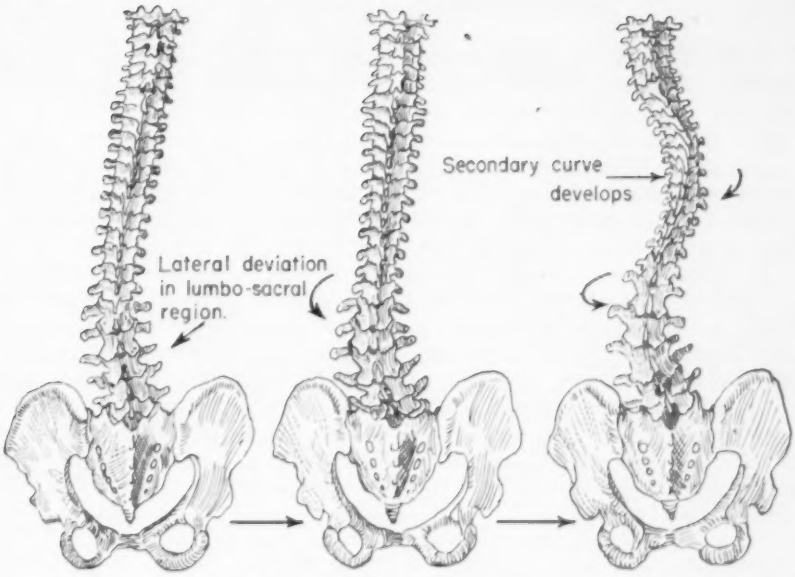


Fig. 1. Type I spinal deviation

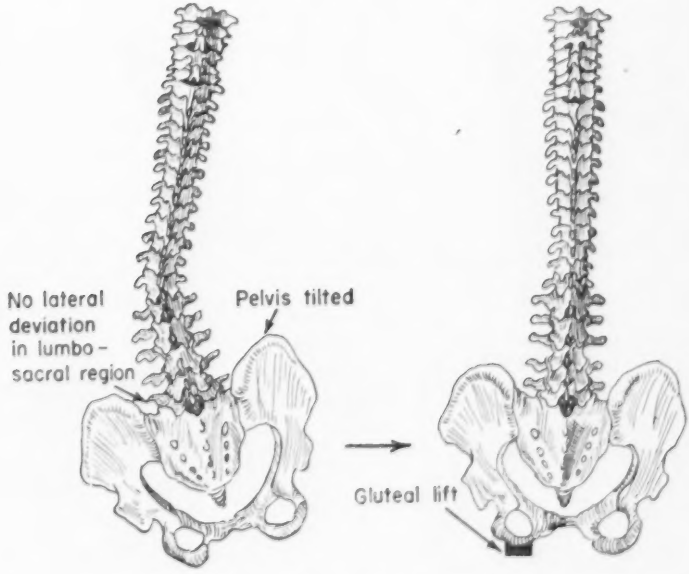


Fig. 2. Type II deviation with correction

Type II (Fig. 2) occurs in the middle or upper lumbar region. Vertical alignment is normal between the lower lumbar and sacral segments, and the pelvis tilts downward on the side of convexity of the curve. Loss of bulk in the gluteal and thigh muscles is the most common cause. The persistent overuse of unilateral strength is also important. In some instances, soreness in the buttocks or tightness of the iliotibial fascia causes the patient to sit with a high hip on the side of discomfort.

Leveling the pelvis corrects the deformity. A gluteal or shoe lift may be used safely.

Type III occurs in the dorsolumbar region and is divided into 2 subtypes, depending on the relationship of the greatest convexity to the dorsolumbar junction. Subtype A is characterized by a long "C" curve, with greatest convexity at or just above the dorsolumbar junction (Fig. 3). Subtype B is more angular, with the greatest amount of convexity high in the lumbar region (Fig. 4).

Subtype A is caused by diffuse, moderate to very severe weakness of all musculature supporting the middle and lower back. Irreversible structural changes take place rapidly. Treatment consists of restriction of weightbearing, specific stretching of tissues on the side of the concavity, and symmetric strengthening of the back and abdomen in a corrected position. No general mobilization is permitted except for muscle reeducation. A corset with posterior stays rein-

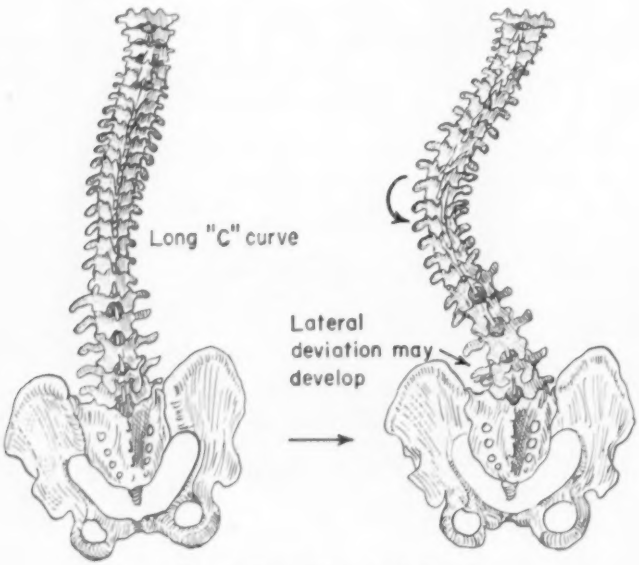


Fig. 3. Type III A deviation

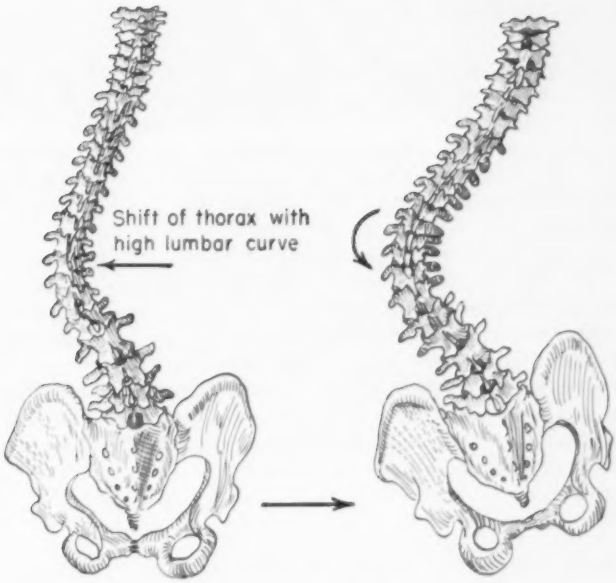


Fig. 4. Type III B deviation with usual progression

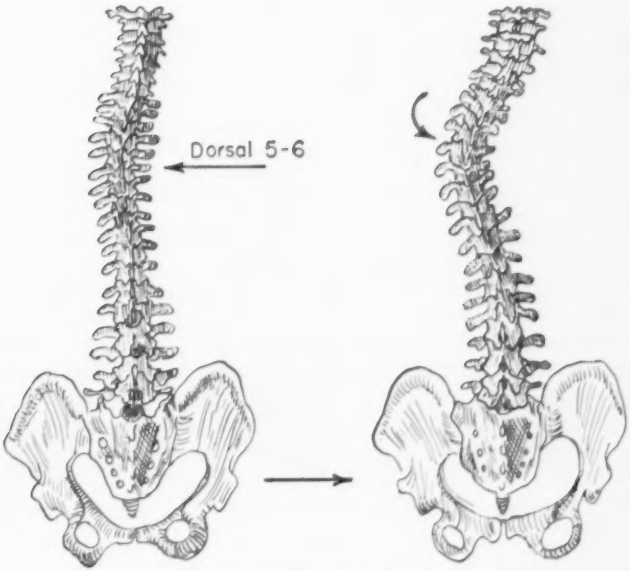


Fig. 5. Type IV deviation

forced by horizontal aluminum bars at the top and bottom is the preferred spinal support.

Subtype B is usually caused by asymmetric abdominal weakness or by asymmetric strength in the quadratus lumborum. If weakness of the intrinsic spinal muscles coexists, progress of the curve is rapid. Treatment is the same as for subtype A, with more rigid positioning and limitation of activity.

Type IV occurs high in the dorsal region at the level of D5 or D6 (Fig. 5). Acute angulation at this level, with long, smooth compensatory curves above and below, is seen. Loss of upper thoracic respiratory excursion with normal lower thorax is the most common cause. Asymmetric loss of the sternocleidomastoid, upper trapezius, and shoulder girdle muscles greatly aggravates the deviation.

Treatment consists of restriction of weightbearing, support of middle and upper back, and application of suitable traction apparatus. A corset or back brace without head traction is not effective, and specific stretching is difficult and unrewarding.

Aortography for Study of Liver and Spleen

LEO G. RIGLER, M.D., AND PAUL C. OLFELT, M.D., UNIVERSITY OF MINNESOTA, MINNEAPOLIS, recommend abdominal aortographic examinations for diagnosis of diseases of the liver and spleen and lesions of the hepatic and splenic arterial systems and portal venous circulation. The procedure demonstrates the size, shape, position, and internal structure of the liver and spleen and obviates exploratory surgery.

A needle is introduced in the back below the eleventh rib and directed cephalad and medially so that the aorta is entered above the eleventh segment. Injection of 40 cc. of the contrast medium, 70% Urokon, is made as rapidly as possible.

In healthy persons, after the contrast medium is introduced, the density of the liver is greatly increased in comparison with films made before injection. With cirrhosis, little or no change can be observed.

With cystic diseases of the liver, multiple small areas of rarefaction are seen within the opacified organ. Hepatic tumors and masses of neighboring structures can be differentiated. Since metastases prevent diffusion of the dye and, hence, diminish density, extent of spread can often be determined.

Aneurysm of the splenic artery, hemangioma of the liver, or other lesions that affect the arterial circulation of the spleen or liver are also revealed.

Abdominal aortography for the roentgen demonstration of the liver and spleen. Am. J. Roentgenol. 72:586-596, 1954.

Total Myelographic Examination

J. T. BRIERRE, M.D., AND J. A. COLCLOUGH, M.D.
New Orleans

*A simple and accurate technic for complete visualization of the spinal subarachnoid space is described.**

DISCOMFORT to the patient during radiographic visualization of the spinal subarachnoid space is reduced by a newly devised technic. Exposure is diminished, and less time and effort on the part of the surgeon and radiologist are required than with conventional myelographic methods. Search up and down the spine for a small fragmenting amount of radiopaque material is eliminated, and the percentage of errors is decreased.

The patient lies flexed in the lateral recumbent position (Fig. *a*), and a lumbar spinal puncture is done. If an upper lumbar, thoracic, or cervical lesion is suspected, puncture is made in the fourth lumbar space. The needle should be introduced above or below a suspected lesion of the lower spine, rather than at the site of the disturbance. Spinal fluid is collected for laboratory examination if the pressure is not increased.

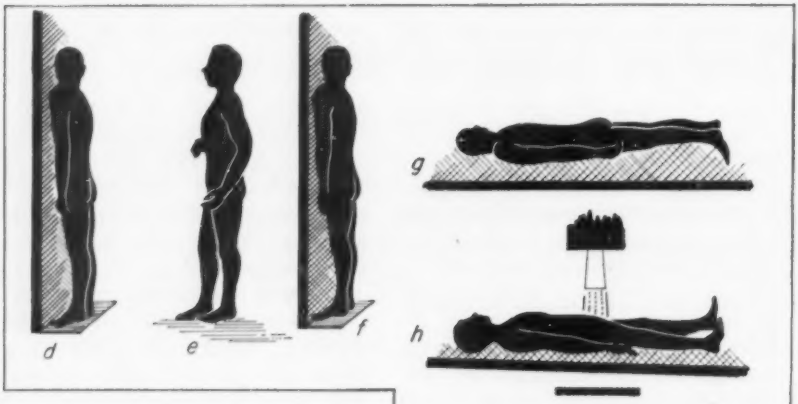
The patient's head is elevated slightly (Fig. *b*); 21 cc. of Pantopaque is injected into the subarachnoid space. After the needle is withdrawn, the patient is rotated to the prone position with feet against the footboard (Fig. *c*); the table is shifted to a vertical position (Fig. *d*). The patient walks about the room (Fig. *e*) and, perhaps, flexes the spine.

Fluoroscopic study of the lumbosacral area is done and, after areas are selected for filming, the patient faces the table and is returned to horizontal position (Fig. *f*). The thoracic region is filled by turning the patient to the supine position (Fig. *g*). With the head slightly elevated, fluoroscopic examination is done and films are made (Fig. *h*).

The cervical area is examined while the patient is in the prone position with the neck extended

Position of patient in various steps of myelographic examination

*Total myelography. Radiology 64:81-84, 1955.



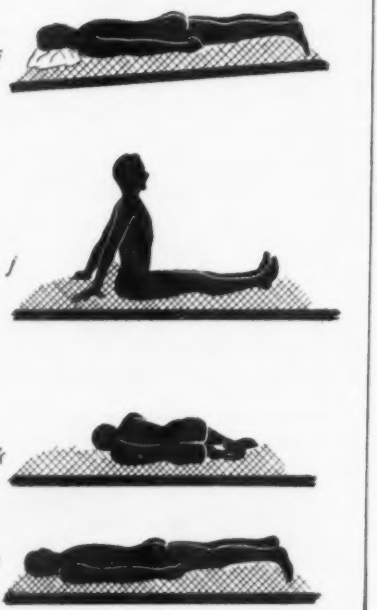
and with the head of the table tilted downward only 45° or less (Fig. *i*). Almost complete inversion is necessary with other methods.

The patient sits up for a few minutes (Fig. *j*) when examination is over and then returns to the lateral recumbent position (Fig. *k*). A second lumbar puncture is done, and the needle is left in place while the prone position is assumed (Fig. *l*) and radiopaque material is removed.

When large amounts of media are injected, globulation is reduced and withdrawal of the material is easier. The distal subarachnoid space is usually filled to levels varying from the first lumbar to the eleventh thoracic interspace. For lumbar study alone, the needle is not withdrawn and study is made from films without fluoroscopy.

A lumbar disk not ordinarily demonstrable may be visualized, since strain of walking may cause sufficient additional protrusion.

Operations were done for 15 of 18 patients examined with the technic. None of the myelograms were false-positive or false-negative.



Etiology and Therapy of Anal Pruritus

HOWARD M. FRYKMAN, M.D.
Minneapolis

*Persistent perianal itching is generally caused by a combination of factors, and treatment with an ointment or suppository is seldom adequate.**

SINCE many sensory nerve endings are located in the anal area, even slight stimulation produces irritation and an itching sensation. Scratching and infection cause lichenification. The normal radiating anal skin folds are usually raised and edematous and are often excoriated.

Duration and time of most severe itching and relation of symptoms to defecation, baths, menstrual cycle, and ingestion of food and drugs should be determined. The patient is also questioned regarding dietary habits, soft stools, skin diseases, and allergy.

Proctologic study should include examination of the urine and of the stool for parasites and an estimation of rectal secretion *p*H.

Pathologic conditions, such as prolapsing internal hemorrhoids, redundant rectal mucosa, anal fissures and fistulas, hypertrophied anal papillas or polyps, allow mucus to leak unto perianal skin. The content of the secretion may be irritating or the moisture may produce chafing and maceration on a mechanical basis. Vaginal discharge may also be a factor.

Chemical irritation is probably the most important causative agent. Rectal secretions of persons with anal pruritus contain increased amounts of proteolytic enzymes, and the *p*H is elevated above the normal range of 6.5 to 7.5. Enzymatic activity, especially in alkaline medium, irritates perianal skin.

The *p*H may also be elevated by changes in the colonic flora induced by oral antibiotics or diet.

Perianal skin is susceptible to *fungous infections,* but the organisms are generally secondary invaders. *Candida* and *Epidermophyton* are the fungi most commonly involved.

Allergy is an infrequent cause of pruritus ani. *Intestinal parasites* are not common etiologic agents, but pinworm infestation should be considered, especially when the patient scratches at night or is a child.

Nervousness and tension may be contributory factors but the underlying basis for persistent itching is seldom psychogenic. Diabetes mellitus is the most common *constitutional disease* with secondary anal pruritus.

Contact of the perianal area with rough toilet paper or clothing must be avoided. The patient should not wear clothing that binds the buttocks tightly together.

*Anal pruritus. Minnesota Med. 38:19-27, 1955.

The region is cleansed with cotton soaked in water and dried by blotting with tissue. No soap should be used in the perianal area. Vaseline or Unna's paste may be applied for protection, especially before bathing.

A modified acid-ash diet that reduces excessive alkalinity in the bowel is advisable, especially during early phases of treatment. Dairy products are the most important component, and carbohydrate foods are included. Protein consumption must be moderately reduced; meat and eggs are permitted, but leafy vegetables are restricted. The only fruits included are prunes, plums, and cranberries.

Diet may be supplemented with Lactinex tablets, composed of a combination of viable *Lactobacillus acidophilus* and *L. bulgaricus* organisms.

Rectal irrigations with 1 tsp. of a 20% lactic acid solution to 1 pt. of water, employed three or four times a day for acute disease and less frequently when symptoms are not as severe, reduce alkalinity and cleanse the rectum.

For local medication, the mildest agents that gives the patient relief should be used. Preparations with a high antipruritic concentration are effective only temporarily and cause secondary irritation. Cold, moist packs of 1:10 aluminum acetate solution or 1:4,000 potassium permanganate or an ice bag may be used for severe pruritus.

For fungous infection, a dye, a fatty-acid fungicidal preparation such as Desenex or Sopronol diluted to one-half or one-third strength, or tar ointment may be prescribed.

Hydrocortisone ointment is a valuable adjunct for use after the acute inflammatory reaction is eradicated. Roentgen-ray therapy may be administered for a limited time if other methods are unsuccessful.

Injections of long-acting local anesthetics beneath the perianal skin may be necessary to interrupt the scratch-itch cycle. An aqueous preparation of Diothane and benzyl is generally used.

When an operative procedure is done for a person with pruritus to correct an anorectal pathologic condition, the perianal skin may be undercut to sever the perianal sensory nerve fibers. Itching is relieved until the nerve fibers regenerate so that measures can be taken to treat the skin.

If all therapy is unsuccessful, elimination diets and skin tests may be employed to identify an allergen.

¶ PHYSIOLOGIC ANEMIA OF PREGNANCY is actually due to insufficient formation of hemoglobin and red cells resulting from a deficiency of iron, believe L. R. Davis, M.D., of King's College Hospital, London, and R. F. Jennison, M.D., of St. Mary's Hospital, Manchester. Hemoglobin levels of pregnant patients are restored to the values found in normal, nonpregnant women by thrice-daily administration of ferrous sulfate.

J. Obst. & Gynaec. Brit. Emp. 61:103-108, 1954.

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1. Schubert, V.: Ztschr. Haut- u. Geschlechtskr. *16*:17, 1954.
2. Pierce, H. E., Jr.: J. Nat. M. A. *45*:207, 1953.
3. Sigg, K.: Schweiz. med. Wchnschr. *77*:123, 1947.
4. Tronstein, A. J.: J. Invest. Dermat. *13*:119, 1949.

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Eczema of the Eyelids

FREDERICK H. THEODORE, M.D.
Mount Sinai Hospital, New York City

*Failure to recognize the underlying cause frequently accounts for unsuccessful treatment of eczema of the eyelids.**

WHILE contact allergy is the most common cause of acute eruptions of the eyelids, staphylococcal infections and generalized dermatoses may be responsible for more chronic forms of disease.

Contact allergy is usually responsible for acute eczema. Ophthalmic drugs and cosmetics are most frequently responsible. A careful history combined with patch testing usually establishes the diagnosis.

Eczema from ophthalmic drugs begins with itching of the eyes and papillary conjunctivitis. Anesthetics, mydriatics, antibiotics, mercurials, and sulfonamides are the usual offenders. Drops affect the canthi and lower lids; ointments affect lid margins. Conjunctival eosinophilia occurs.

Drug irritation must be differentiated from drug allergy. Irritation causes a nonspecific follicular reaction without eczema or eosinophilia. Properly prepared solutions will eliminate irritation from deteriorated products, but allergy requires substitution of another drug.

Cosmetic allergy usually occurs on the upper lids without conjunctivitis. The sensitizing agent may have been applied at a site remote from the eyelid, and careful questioning of the patient is essential. The cosmetic is applied in the usual manner during skin testing, and no patch is used. Nail polish, powder, creams, lipstick, and hair preparations are the usual allergens.

Allergic eczema is best treated by removing the cause. Little or no local therapy is required. Corticotropin, cortisone, or hydrocortisone may be given systemically for a few days when reactions have been severe.

Staphylococcal infection is the most common cause of chronic lid eczema and is frequently overlooked. The source is a focus of infection in or about the eye. Blepharitis with ulceration of the lid margins and meibomitis occur frequently. Superficial epithelial keratitis may be demonstrated with fluorescein and a slit lamp. Staphylococci are cultured from the conjunctivas and lid margins. Epithelial scrapings show neutrophils but no eosinophils.

The focus of infection must be eradicated. The systemic antibiotics should be tried first but are not very effective. The lid margins are expressed to eliminate meibomitis, and 2% silver nitrate is applied.

(Continued on page 148)

*Ocular eczema: its classification and treatment. J. Mt. Sinai Hosp. 21:255-269, 1955.

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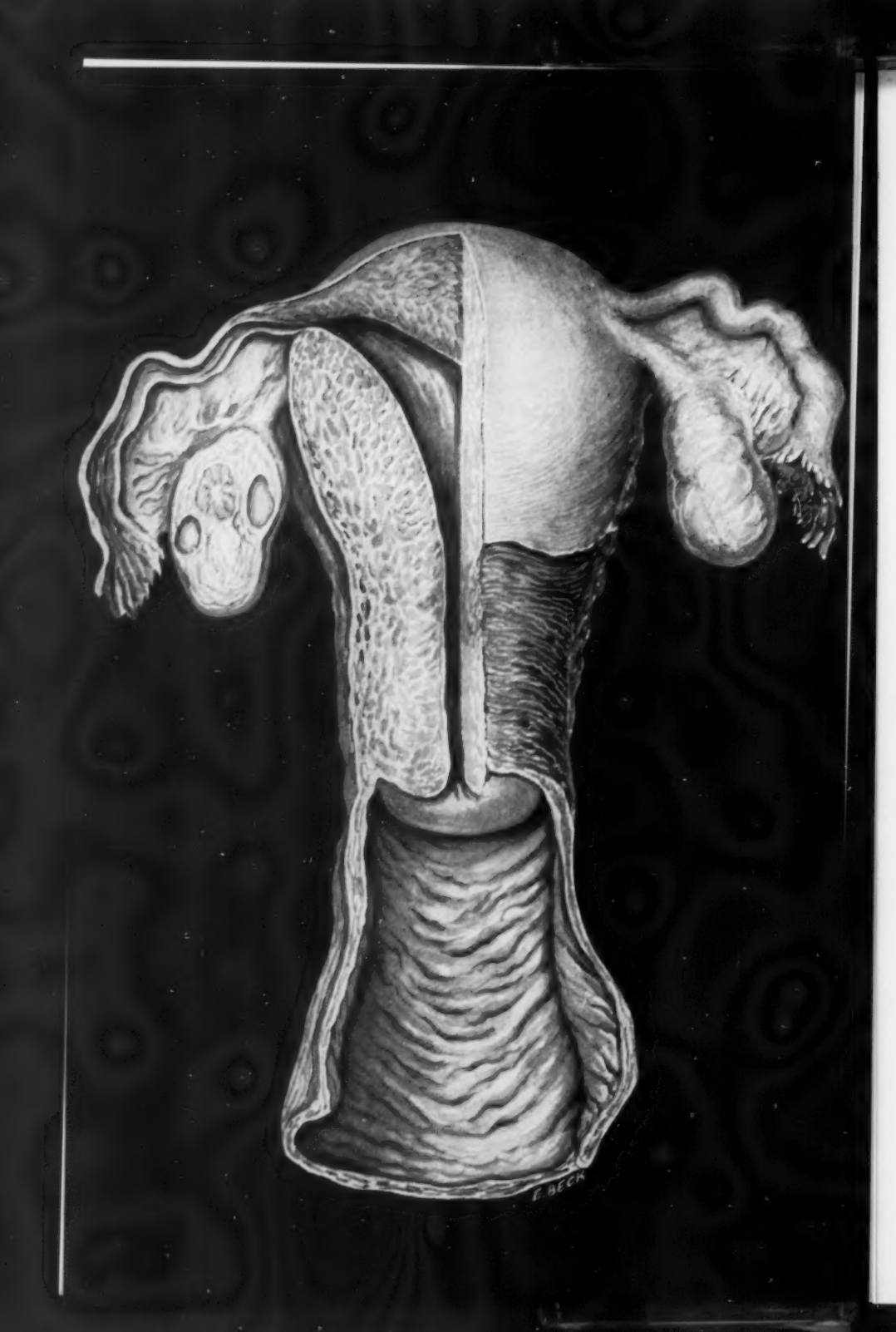
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In pharmacologic studies, using the Allen-Doisy technic, Vallestril was found to be more active than estradiol and twice as potent as estrone on the vaginal mucosa. On the other hand, using the Rubin technic, Vallestril was found to have only one tenth the activity of estrone on the uterus, a suggested explanation of its observed low incidence of withdrawal bleeding.

In clinical evaluation, covering a period of two and one-half years, Vallestril was found* to be "an effective synthetic estrogen . . . singularly free from toxic effects and complications, especially uterine bleeding. . . . The beneficial effect of the medication appeared within three or four days in most menopausal patients. . . . failure to encounter withdrawal bleeding in any patient was most gratifying. . . ."

Such unwanted reactions as nausea, mastalgia and edema also occur less frequently with Vallestril therapy.

Vallestril is preferentially indicated whenever estrogens are of value: The menopausal syndrome and the pain of postmenopausal osteoporosis and osseous metastases of prostatic cancer.

Dosage: Menopause—3 mg. (1 tablet) two or three times daily for two or three weeks, followed by 3 or 6 mg. daily for one month. Supplied only in scored tablets of 3 mg. G. D. Searle & Co., Research in the Service of Medicine.

---

*Sturnick, M. I., and Gargill, S. L.: New England J. Med. 247:829 (Nov. 27) 1952.

SEARLE

Hydrocortisone ointment reduces inflammation. Resistant disease is treated with increasing doses of staphylococcic toxoid or vaccine or a combination of both.

Generalized dermatoses are diagnosed when typical lesions are found away from the eyelids. Atopic dermatitis tends to involve the lids, face, neck, and flexor surfaces. Seborrheic dermatitis occurs on the lid margins, scalp, postauricular and axillary regions, and over the sternum. Dry skin and greasy scales are usually seen. Psoriasis involves the hairline and extensor surfaces.

Treatment of the lids in generalized dermatoses is symptomatic. Wet dressings are used for acute eruptions with erythema and edema. Chamomile tea, cold milk, 1:20 solution of aluminum acetate, or 2% sodium propionate is satisfactory. Lassar's paste is used in the subacute stage, and petrolatum is applied after the eruption becomes dry. Fissures are cauterized with 2% silver nitrate.

Stronger ointments are reserved for chronic infiltrated eruptions. Sulfur is employed for seborrhea, ammoniated mercury for psoriasis, and Vioform for eczema; 1 to 2% concentrations are used.

Emotional Factors in Psoriasis

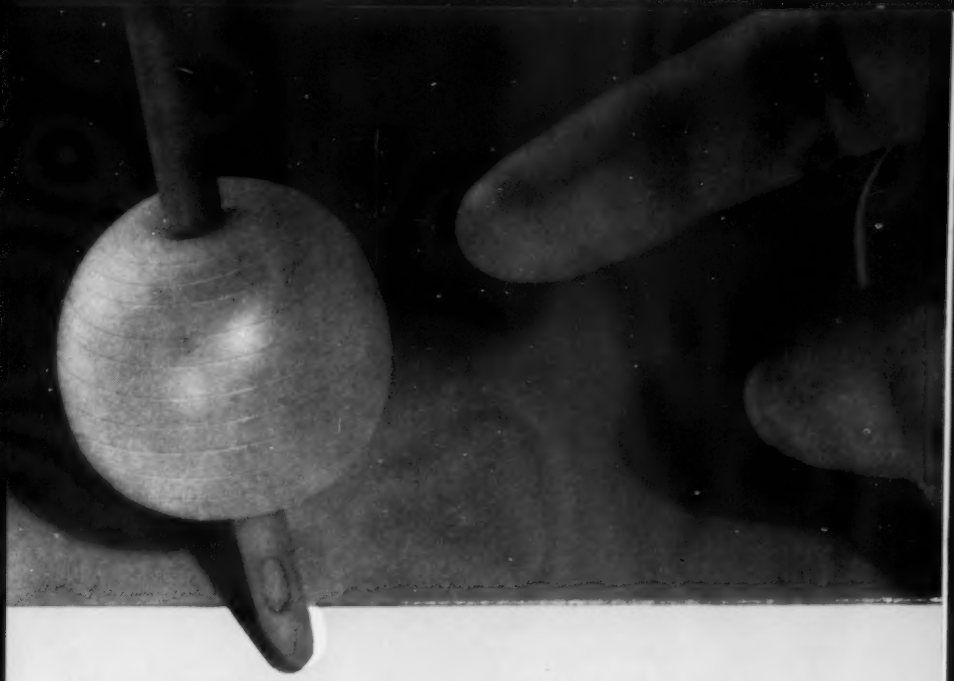
DAVID T. GRAHAM, M.D., WASHINGTON UNIVERSITY, ST. LOUIS, finds a relation between psoriasis and the patient's attitude toward stressful life situations.

All but 1 of 10 persons with psoriasis felt exposed to constant nagging and gnawing and thought that putting up with the situation was the only course to follow. The steadiness of the trauma and the decision to take no direct action despite the annoyance were emphasized in each individual. The patients were from 23 to 60 years of age.

After identification of traumatic aspects in a subject's environment, experimental interviews were conducted. Cutaneous vascular function was recorded before, during, and after patient-doctor discussions of events known to have been associated with attacks of psoriasis. Typical vascular changes of dilatation of arterioles and increased tone of minute vessels in the dermis appeared only when disturbing features relevant to the skin disease were discussed. During the periods of reassurance and diversion at the end of the experimental session, the direction of the vascular reaction reversed in each subject.

The site of predilection for psoriatic lesions seems to be partially determined by chronic slight trauma, an illustration of the Koebner phenomenon.

The relation of psoriasis to attitude and to vascular reactions of the human skin. J. Invest. Dermat. 22:379-388, 1954.



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Antimycotic Action of Stilbamidine

ARTHUR C. CURTIS, M.D.
University of Michigan, Ann Arbor

*Many systemic mycotic infections may be controlled by therapy with stilbamidine and some related compounds.**

NORTH American blastomycosis is especially susceptible to stilbamidine, and the aromatic diamidine is also effective against actinomycosis and sporotrichosis. Histoplasmosis, cryptococcosis, and coccidioidomycosis are not affected by the agent.

Stilbamidine is dissolved in 100 to 1,000 cc. of 5% glucose and administered by slow intravenous drip. The initial amount of 50 mg. is increased by increments of 50 mg. to a dose of 150 mg. daily. Generally, 10 to 15 injections of 150 mg. are given during a period of two to four months. Among adults, the average total dose is 3 to 5 gm.

Since optimum dosage and mode of administration of stilbamidine for North American blastomycosis have not been determined, recurrences are common.

The antifungal agent is stored mainly in the liver, kidney, and adrenals, apparently for long periods of time, so patients continue to improve long after termination of therapy. Stilbamidine may damage the liver and kidneys and decrease blood pressure, but hepatorenal toxicity is infrequent when the drug is given in small doses.

The best known side effect of stilbamidine, neuropathy over the trigeminal nerve areas, occurs late in the course of therapy or one to thirteen months after the drug has been given. Development of the sequela does not depend on dosage. The neuropathy consists of sensory disturbances and dissociated anesthesia with numbness, formication, tingling, burning, and itching. Impairment of sensation is usually not permanent but may persist for months or years.

Since 2-hydroxystilbamidine is less toxic and can be given in larger doses, this derivative may replace stilbamidine. The compound can be given in amounts of 15 to 19 gm. without producing neuropathy and is especially effective against kala-azar, North American blastomycosis, and multiple myeloma.

Diethylstilbestrol, another compound with a stilbine nucleus, may arrest cutaneous North American blastomycosis.

Cinnamic acid and nitrostyrene compounds are similar in chemical structure to stilbamidine and may be useful as antimycotic agents. Nitrostyrenes are more effective in vitro against fungi than is diethylstilbestrol.

*Stilbamidine and related compounds in mycotic infections. Proc. Inst. Med. Chicago 20:235-246, 1955.

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(Dihydrocodeinone Bitartrate)

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FOR PAIN[2]

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RICHMOND HILL 18, NEW YORK

1. Hynson, S., and Kissenbiyan, S. H.: Illinois M. J. 104:237, 1953.
2. Piper, C. E., and Nicklas, F. W.: Indust. Med. 23:510, 1954

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ANEMIA

accompanying or following infection

The "low-grade" anemia which so often accompanies or follows infection in children or adults, often is complicated by depressed bone-marrow function.[1]

Cobalt appears to be the only known agent which can be used to stimulate the hemopoietic function of bone-marrow.

RONCOVITE (*the original clinically proved pure cobalt-iron product*) *provides the long-missing factor in the treatment of both iron-deficiency and "chronic low-grade" (secondary) anemia. The presence of cobalt may actually "force" the utilization of iron*[2] *where bone-marrow inhibition is present.*

Extensive clinical evidence documents both the hemopoietic effectiveness and safety of Roncovite.

Clinical Proof—
in Chronic Low-Grade Anemia

"REFRACTORY ANEMIA"

"With cobalt, an effective therapy for anemia accompanying infection is possible."[3]

CHRONIC SUPPURATIVE INFECTION

"In all patients a reticulocytosis was observed within 6 days. This was followed by increases in red-cell counts, in hemoglobin values, in blood volume and in total circulating hemoglobin."[4]

POST-INFECTION ANEMIA

Excellent results[5] have been reported in post-infection anemia.

RONCOVITE

The original, clinically proved, pure cobalt-iron product.

SUPPLIED:

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Each enteric coated, red tablet contains:
Cobalt chloride..... 15 mg.
Ferrous sulfate exsiccated..... 0.2 Gm.
Bottles of 100

RONCOVITE-OB

Each enteric coated, red capsule-shaped tablet contains:
Cobalt chloride..... 15 mg.
Ferrous sulfate..... 0.2 Gm.
Calcium lactate..... 0.9 Gm.
Vitamin D..... 250 units
Bottles of 100

RONCOVITE DROPS

Each 0.6 cc. (10 drops) provides:
Cobalt chloride (Cobalt 9.9 mg.)..... 40 mg.
Ferrous sulfate..... 75 mg.
Bottles of 15 cc. with calibrated dropper.

DOSAGE:

One tablet after each meal and at bedtime. Children 1 year or over, 0.6 cc. (10 drops); infants less than 1 year, 0.3 cc. (5 drops) once daily diluted with water, milk, fruit or vegetable juice.

1. Wintrobe, M. M.: Clinical Hematology, Philadelphia, Lea & Febiger, 1951, p. 419.
2. Wintrobe, M. M. et al.: Blood *2*:323 (1947).
3. Weissbecker, L.: Dtsch. M. Wschr. *75*:116 (1950).
4. Robinson, J. C., et al.: The New England J. M. *24*:749 (1949).
5. Weissbecker, L., and Maurer, R.: Klin. Wchnschr. *24-25*:855 (1947).

Bibliography of 192 references available on request.

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In the Service of Medicine Since 1870

Management of Globus

MEADE MOHUN, M.D.
Stanford University, San Francisco

*Serpasil may relieve the sensation of globus when organic disease is not responsible.**

GLOBUS is a subjective symptom in which the individual feels a lump or obstruction in the throat when swallowing. Although many diseases can initiate this sensation and must be excluded, an anxiety-tension syndrome based on physical or emotional stress is the usual cause.

A disordered hypothalamic response may underlie the condition. Emotion and stress are apparently transmitted from the psychomotor centers of the frontal lobe to the hypothalamus, a nuclear center for the central autonomic system.

If the hypothalamus does not receive an excess of uncontrolled emotional responses from the frontal lobe and is capable of sending out balanced responses, the resulting peripheral expression by way of the pituitary and the autonomic system remains coordinated and the patient feels well. However, if a disorganized peripheral response occurs as a result of undue environmental stimuli with which the patient's hypothalamus cannot cope, either an acute or chronic disturbance of some end organ may occur.

This disordered control is carried out by neurovascular, neuromuscular, and neurosecretory mechanisms. An excessive sympathetic stimulation or an antigen-antibody reaction in the smooth muscle sphincter often results in end-artery spasm. The end-artery spasm disrupts the delicate balance between the artery-capillary-venule systems. Passive dilatation of the capillary venous network ensues with sludging of blood and extravasation of transudate into surrounding intravascular spaces. Such localized edema may be one source of globus sensation.

Excessive sympathetic stimuli also may affect the peripheral neuromuscular mechanism and cause spasm of the pharyngeal-esophageal musculature, especially cricopharyngeal structures, from which a sensation of globus will result.

Light psychotherapy, reassurance and simple explanation of the fear mechanism, and some sedation appear helpful but seldom cure.

Because Serpasil apparently protects the central autonomic centers against stimulations from peripheral or frontal cortical areas, the drug was administered to 30 patients with globus resulting from emotional tension, anxiety, and fear. Of these patients, 19 improved greatly or were completely cured. Doses of 0.1 to 0.5 mg. per day are given for maintenance.

*Globus. Laryngoscope 65:73-79, 1955.

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and the 60-10-70 Basic Diet

With Obedrin and the 60-10-70 Basic Diet, the overweight patient receives specific, proved aids to control overeating. Loss of weight is accomplished more comfortably, while the patient develops new and better eating habits.*

OBEDRIN CONTAINS:

Methamphetamine for its anorexigenic and mood-lifting effects.

Pentobarbital as a corrective for any excitation that might occur.

Vitamins B_1 and B_2 plus niacin for diet supplementation.

Ascorbic acid to aid in the mobilization of tissue fluids.

Obedrin contains no artificial bulk, so the hazards of impaction are avoided. The 60-10-70 Basic Diet provides for a balanced food intake, with sufficient protein and roughage.

*Eisfelder, H. W.: Am. Pract. & Dig. Treat., *5*:778 (Oct. 1954).

FORMULA:

Semoxydrine HCl (Methamphetamine HCl) 5 mg.; Pentobarbital 20 mg.; Ascorbic acid 100 mg.; Thiamine HCl 0.5 mg.; Riboflavin 1 mg.; Niacin 5 mg.

Write for 60-10-70 Diet Pads, Weight Charts, and samples of Obedrin.

The S. E. MASSENGILL COMPANY

Bristol, Tennessee

Management of Subarachnoid Hemorrhage

JOHN N. WALTON, M.D.
National Hospital, London

*The mortality rate for spontaneous subarachnoid hemorrhage can be reduced by surgery, but operation is not advisable for all patients.**

INCIDENCE of subarachnoid bleeding unrelated to trauma, birth, or atherosclerosis is highest between 40 and 60 years of age. Patients usually seek care because of severe headache and neck stiffness, and neurologic signs occur several hours after the ictus.

Spontaneous subarachnoid hemorrhage is caused by aneurysmal rupture in 80% of instances and by perforation of an intracranial angioma in about 10%. Other tumors, metastasis, endocarditis, blood disease, intracranial sinus thrombosis, and spinal subarachnoid bleeding are less frequent etiologic factors.

Aneurysm and angioma cannot be differentiated by manifestations. Tumor is likely if the individual has had multiple previous bleeding episodes, focal seizures, and progressive neurologic disturbance.

The bleeding point seldom can be localized by signs and symptoms. When headache or facial pain is unilateral, however, the causal aneurysm is on that side of the head. An isolated third cranial nerve palsy in a conscious patient without evidence of subarachnoid hemorrhage is almost always a sign of supraclinoid carotid aneurysm.

Cerebral angiographic examination is the most reliable localization method. Skull films may reveal calcification in the aneurysmal wall or in an angioma.

Conservative management consists of bed rest for four weeks if no complications occur or two to three weeks after headache and signs of meningeal irritation disappear. Demerol may be administered to relieve headache.

Lumbar puncture is the most effective method for reducing intracranial pressure but may cause tentorial herniation. A small needle should be used to prevent persistent leakage.

When a diagnostic puncture is done, only a few drops should be removed if a unilateral fixed pupil, third nerve palsy, or other signs suggest supratentorial intracerebral hemorrhage. In other instances, the spinal fluid pressure may be reduced to normal at the initial tap, but the procedure should be repeated only if severe headache, restlessness, meningeal irritation, coma, or signs of recurrent bleeding are noted.

Intramuscular paraldehyde is giv-

*The prognosis and management of subarachnoid hemorrhage. Canad. M. A. J. 72:165-175, 1955.

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Geriatric Vitamin-Mineral Supplement Lederle

EACH GEVRAL *CAPSULE CONTAINS:*

Vitamin A	5000 U.S.P. Units
Vitamin D	500 U.S.P. Units
Vitamin B_{12}	1 mcgm.
Thiamine Mononitrate (B_1)	5 mg.
Riboflavin (B_2)	5 mg.
Niacinamide	15 mg.
Folic Acid	1 mg.
Pyridoxine HCl (B_6)	0.5 mg.
Ca Pantothenate	5 mg.
Choline Dihydrogen Citrate	100 mg.
Inositol	50 mg.
Ascorbic Acid (C)	50 mg.
Vitamin E (as tocopheryl acetates)	10 I. U.
Rutin	25 mg.
Purified Intrinsic Factor Concentrate	0.5 mg.
Iron (as $FeSO_4$)	10 mg.
Iodine (as KI)	0.5 mg.
Calcium (as $CaHPO_4$)	145 mg.
Phosphorus (as $CaHPO_4$)	110 mg.
Boron (as $Na_2B_4O_7 \cdot 10H_2O$)	0.1 mg.
Copper (as CuO)	1 mg.
Fluorine (as CaF_2)	0.1 mg.
Manganese (as MnO_2)	1 mg.
Magnesium (as MgO)	1 mg.
Potassium (as K_2SO_4)	5 mg.
Zinc (as ZnO)	0.5 mg.

Other Lederle geriatric products include: GEVRABON* Vitamin-Mineral Supplement liquid with a wine flavor; GEVRAL* Protein Vitamin-Mineral-Protein supplement powder; and GEVRINE* Vitamin-Mineral-Hormone capsule.

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Lederle LEDERLE LABORATORIES DIVISION *AMERICAN Cyanamid COMPANY* Pearl River, New York

en to control excitement or seizures. Overhydration must be avoided, and intravenous therapy is seldom advisable. Prophylactic antibiotic therapy is recommended for comatose patients.

Criteria for surgery are not rigid. Though 90% of patients under the age of 40 without altered sensorium, increased blood pressure, or neurologic findings recover, fatal recurrences cannot be predicted and may be averted by operation.

Surgery within twenty-four hours after the event is probably not beneficial. If the patient lives for two or three days, bilateral carotid arteriographic examination should be done. If the arteriograms are negative, therapy must be conservative. Vertebral angiographic study is generally not justified.

Vertebral, basilar, or cerebral aneurysms are seldom amenable to surgery. Nonoperative management is also advisable for patients seen six months or more after recovery from subarachnoid hemorrhage, since risks of angiographic examination and surgery are as great as the hazard of fatal recurrent bleeding.

If surgery seems advisable, arterial ligation or an intracranial operation should be done within ten days of onset of illness. Carotid ligation is recommended for carotid aneurysms, and an intracranial procedure is done later, if possible. Aneurysms of the anterior cerebral, anterior communicating, middle cerebral, posterior communicating, or posterior cerebral arteries require intracranial surgery. Direct attack is necessary for angiomas.

The mortality rate in the eight-week period after hemorrhage is 45%. Almost two-thirds of fatalities occur after a single hemorrhage, and half of the patients that die following the first bleeding episode succumb within twenty-four hours.

Any patient may have a recurrence, but advanced age and severe neurologic impairment are poor prognostic signs. Of 170 persons who survived an initial hemorrhage, 24% had subsequent attacks from eight weeks to twelve years later, and 85% of the recurrences were fatal. Half of the fatalities occurred within six months.

Only about one-third of survivors are symptom free. Sequelae include paralysis, epilepsy, headaches, organic mental deterioration, and anxiety symptoms.

¶ ATYPICAL FACIAL NEURALGIA should be distinguished from tic douloureux, especially if cranial nerve function is impaired. When symptoms are referable to the paratrigeminal area or the cerebellopontine angle, William F. Meacham, M.D., and Thomas J. Holbrook, M.D., of Vanderbilt University, Nashville, find that the cause is usually neoplasm of the gasserian ganglion. Removal of rare primary benign tumor may result in complete cure. Irradiation or excision of malignant growth affords only slight palliation.

Am. Surgeon 20:834-839, 1954.

Relaxed but awake

In emotional and nervous disorders, Mebaral exerts its calming influence without excessive hypnotic action.

Mebaral is also a reliable anticonvulsant.

INDICATIONS:

Because of its high degree of sedative effectiveness, Mebaral finds a great field of usefulness in the regulation of agitated, depressed or anxiety states, as well as in convulsive disturbances. Specific disorders in which the calming influence of Mebaral is indicated include neuroses, mild psychoses, nervous symptoms of the menopause, hypertension, hyperthyroidism and epilepsy.

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Sedative:
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Antiepileptic:
0.1 Gm. (1½ grains) and 0.2 Gm. (3 grains)

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Symposium on Poliomyelitis

Epidemiology

JOHN R. PAUL, M.D.
Yale University, New Haven, Conn.

UNLIKE other infectious diseases, paralytic poliomyelitis has become regarded as epidemic only in the last hundred years, and rates are mounting where hygiene and sanitation are the best.

Up to the midnineteenth century, infection was endemic, confined to infants, and virtually silent, as today in some tropical countries and in cities with substandard living conditions. Starting with minor outbreaks, first noted in 1836 on the island of St. Helena, infantile paralysis soon became a periodic scourge. In 1868, 14 cases were reported in Norway. Sweden was invaded in 1880, western Europe in about 1890, and the northeastern part of the United States in the nineties and the southeastern areas in about 1910.

Within the past twenty years, Puerto Rico, Hawaii, Malta, and other tropical regions have been affected. Endemic disease was noted in the Philippines, Egypt, China, and Korea when foreign soldiers entered and were infected at high rates.

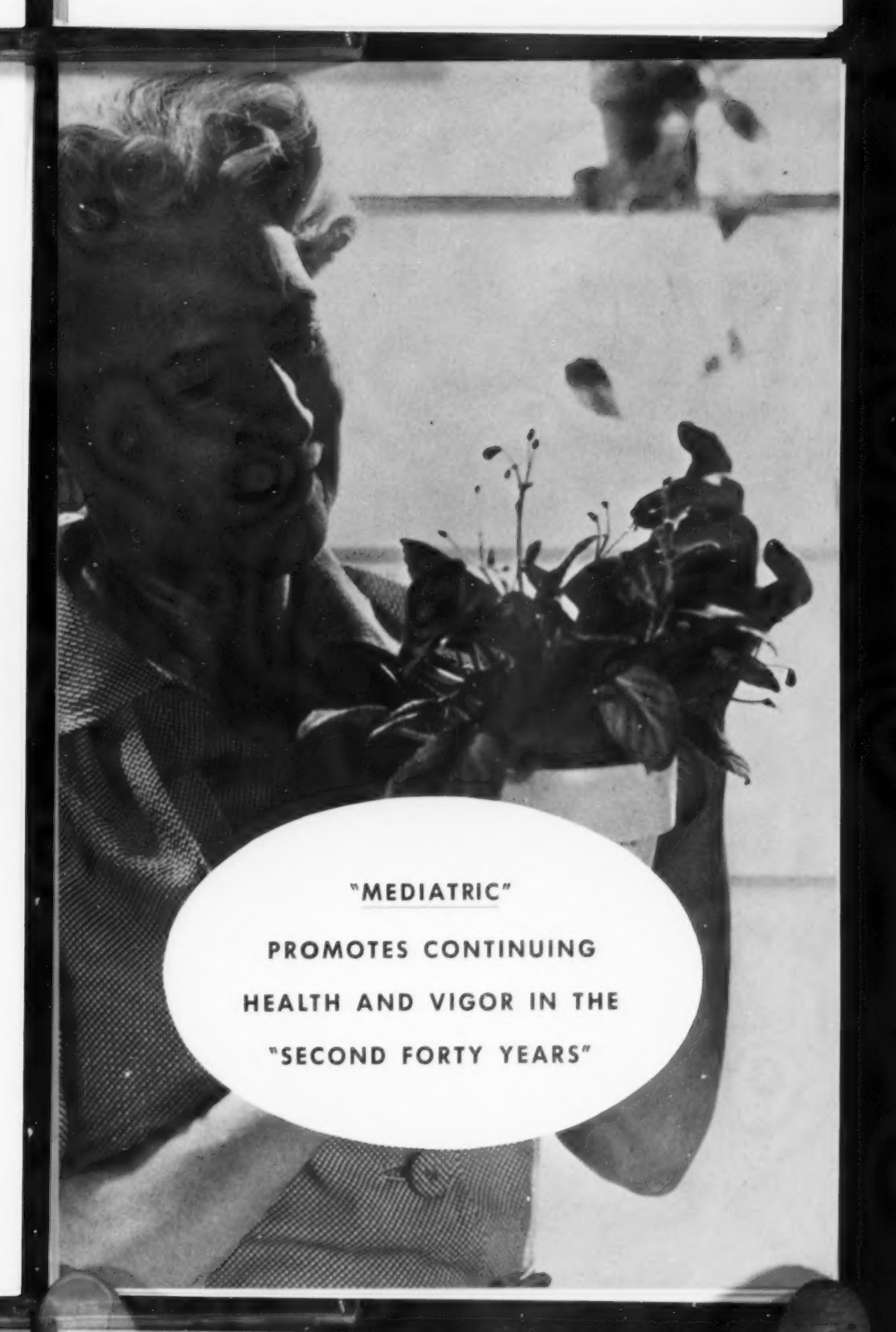
Once epidemics begin, the annual number of cases usually continues to increase, as during the past twenty years in the United States, Canada, and France. On the other hand, as in other countries, levels may remain fairly high with widely irregular swings.

Age incidence has also shifted. In the preepidemic era of the disease, 90% of paralytic cases occurred before the age of 5 years. However, highest rates have shifted to older age groups, as in Sweden at the present time, where the age group affected is 7 to 15 or even 15 to 25 years. This rising age trend became almost worldwide in about 1930. In the northeastern United States, up to 35% of those affected may be 15 years old or more. The denser the population, the younger the age of affected persons. Adult cases are often more severe.

Both obvious and inapparent disease are infectious, and the carrier state may last several weeks. From 1 to 2% of cases are classified as frankly paralytic, 4 to 8% as abortive, and 90 to 95% as inapparent. Healthy as well as paralyzed carriers excrete virus and act as a huge human reservoir for spread of the disease.

The entire alimentary tract, including the mouth, stomach, and bowel, is now thought to be the portal of entry and exit, though possibly virus enters through the skin. As many as 1,000,000 doses infectious for the monkey have been detected in 1 gm. of feces.

Poliomyelitis. Excerpts from the Monograph Series of the World Health Organization, Geneva, Switzerland, 1955.


"MEDIATRIC"
PROMOTES CONTINUING
HEALTH AND VIGOR IN THE
"SECOND FORTY YEARS"

*"...the best time to prepare for old age is in the full vigor of maturity..."**

IN THE 40's AND 50's

the individual can look forward to an even better "second forty years" if timely constructive measures are taken to delay the onset of functional impairment. "Mediatric" will help prevent premature atrophic changes due to waning sex hormone function and faulty dietary habits.

IN THE 60's AND 70's

the maintenance of health and vigor depends largely on the patient's ability to resist environmental stress. "Mediatric" will aid in building up resistance to three important causes of disability: gonadal hormone imbalance, dietary inadequacy, and emotional instability.

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life gains in richness and satisfaction for the elderly man or woman who is protected from disabling functional impairment. In this age group, "Mediatric" can be extremely valuable in maintaining physical vigor, improving muscle tone, and restoring emotional balance.

*Johnson, W. M.: Maryland State M. J. *1*:582 (Dec.) 1952.

Steroids improve protein anabolism, muscle strength, and general health in the aging patient.

Aging patients have responded to combined estrogen-androgen therapy with an increase in body weight, improved strength and vigor, and a restored sense of well-being.[1] In both men and women, preventive steroid therapy "may ease and retard the aging process"[2] and, in some cases, help "to repair some of the damages."[1] It is well established that estrogen and androgen, employed together, have a greater effect on bone and protein metabolism than either steroid, alone.[3] The incidence of side effects is minimized by reason of the opposing action of the two steroids on sex-linked tissues.

Vitamin supplementation is also highly important in the treatment of the aging. Goldzieher and Goldzieher[1] consider it not only important from a nutritional standpoint but also essential to increase the effectiveness of steroid therapy.

In addition, the gentle emotional uplift provided by a mild antidepressant will promote a brighter mental outlook, and enhance patient cooperation.

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1. Goldzieher, M. A., and Goldzieher, J. W.: Endocrine Treatment in General Practice, New York, Springer Publishing Company, 1953, p. 23.
2. Benjamin H.: J. Insur. Med. *6*:12 (Dec.-Jan.-Feb.) 1950-1951.
3. Reifenstein, E. C., Jr., in Harrison, T. R.: Principles of Internal Medicine, Philadelphia, The Blakiston Company, 1950, p. 655.

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Average dosage: Male — 1 capsule or 3 teaspoonfuls daily, or as required. *Female* — 1 capsule or 3 teaspoonfuls daily, or as required, taken in 21 day courses with a rest period of one week between courses.

"MEDIATRIC" Capsules

Each capsule contains:

Conjugated estrogens equine ("Premarin"®)	0.25 mg.
Methyltestosterone	2.5 mg.
Vitamin C (ascorbic acid)	50.0 mg.
Thiamine mononitrate (B_1)	5.0 mg.
Vitamin B_{12} U.S.P. (crystalline)	1.5 mcg.
Folic acid U.S.P.	0.33 mg.
Ferrous sulfate exsic.	60.0 mg.
Brewers' yeast (specially processed)	200.0 mg.
d-Desoxyephedrine HCl	1.0 mg.

No. 252 – bottles of 30, 100, and 1,000.

"MEDIATRIC" Liquid

Each 15 cc. (3 teaspoonfuls) contains:

Conjugated estrogens equine ("Premarin"®)	0.25 mg.
Methyltestosterone	2.5 mg.
Thiamine HCl (B_1)	5.0 mg.
Vitamin B_{12} U.S.P. (crystalline)	1.5 mcg.
Folic acid U.S.P.	0.33 mg.
d-Desoxyephedrine HCl	1.0 mg.

Contains 15% alcohol

No. 910 – bottles of 16 fluidounces and 1 gallon.

Ayerst Laboratories • New York, N. Y. • Montreal, Canada 5536

In the first week of illness, both the pharynx and intestinal tract exude or excrete virus in large quantities. The bowel may continue to excrete for as long as seventeen weeks from onset, but long-term carriers have not as yet been discovered.

Man contaminates both companions and environment. Virus is found in urban sewage and in privies, though seldom in milk or the water supply. Organisms may be transported by flies and cockroaches and have survived as long as three weeks in artificially infected mosquitoes.

In the tropics, cases occur rather uniformly throughout the year but are more frequent in summer than in winter in northern and southern temperate climates. Seasonal trends are not yet fully understood.

Why so few infected individuals become paralyzed in ordinary epidemics is also unknown, although various factors may be concerned. Muscular involvement depends not only on the type of virus but may be precipitated by fracture or other local trauma, tonsillectomy and adenoidectomy, extraction of teeth, overexertion and fatigue, or intramuscular injections. Pregnant women are especially vulnerable, as are animals given cortisone.

A susceptible group forms a vacuum of increasing size into which the virus may surge, as in the Canadian Arctic during 1948 and 1949. In the remote Eskimo settlement of Chesterfield Inlet, almost 60% of the inhabitants were paralyzed, with the clinical rate lowest in babies.

Immunity of a population can be measured by current methods of tissue culture, with results comparable to those of tuberculin or Schick tests.

In healthy people, antibodies that neutralize 1 or more types of virus show either recent or long-past infection. On the other hand, complement-fixing antibodies indicate poliomyelitis within the past three to five years.

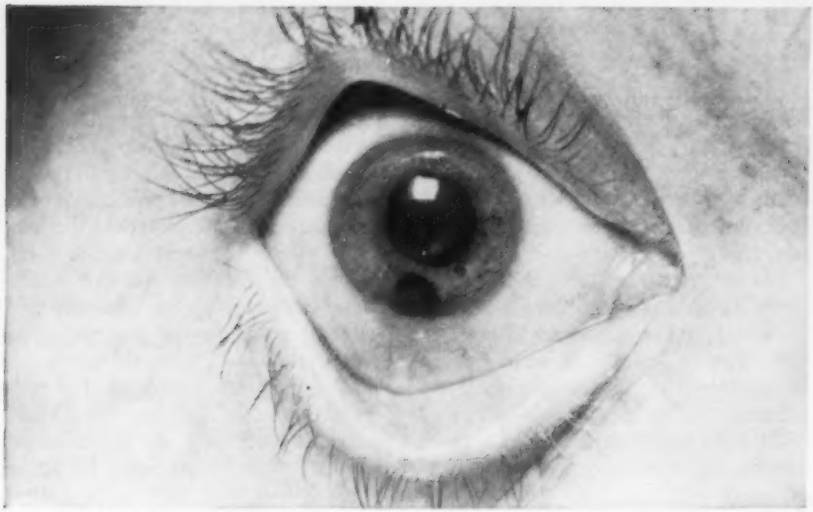
In 2 Eskimo communities surveyed, young adults frequently lacked neutralizing antibodies of all 3 viral types. However, in some tropical countries with substandard sanitation, most children past the age of 4 or 5 years are immune to Type 2 infection. In Charleston, W. Va., however, not until the average age of 30 years was 90% of the population resistant to the single strain investigated.

Results of triple-type surveys are about the same as for Type 2 alone. In some areas, approximately 80% of children have neutralizing antibodies to 1, 2, or 3 viral classes by the age of 5 years.

Where living conditions are poor and crowded, immunity is acquired early and without symptoms, infection smoulders, and outbreaks are unlikely. Where civilization is more advanced, children are subject to epidemics at 6, 8, or 10 years without having acquired any infection or immunity.

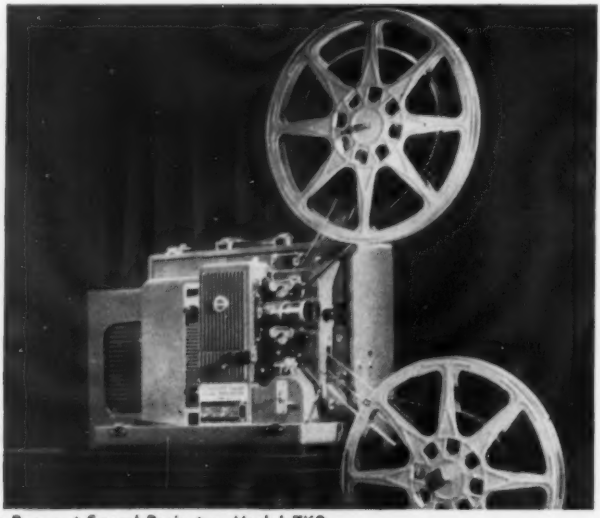
Artificial immunization apparently offers far more hope of protection against the disease than attempts to rid the environment of causative organisms.

(Continued on page 164)



Tattoo, right cornea

If the case is worth filming...



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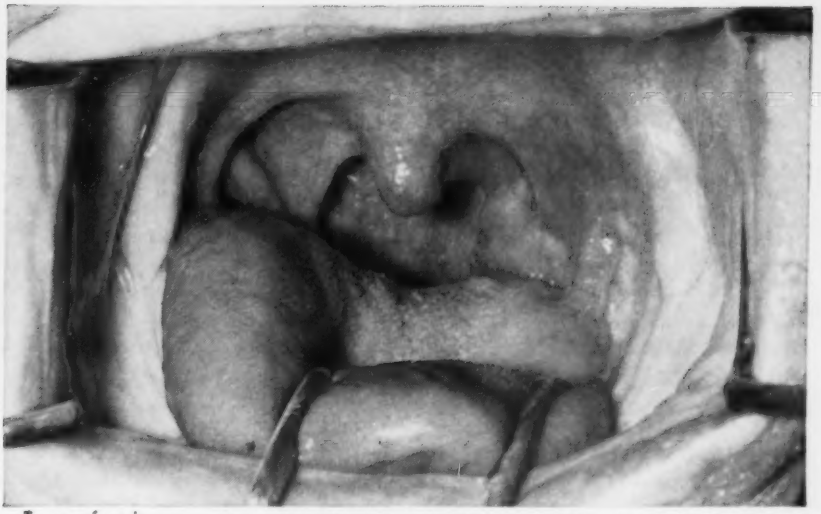

Tumor of neck

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Tissue Culture Technics

JOHN F. ENDERS, PH.D.
Harvard University, Boston

POLIOMYELITIS virus has been cultivated in vitro in extraneural tissues of monkeys and human beings since 1949. Tissue cultures can be prepared and maintained inexpensively in virtually unlimited numbers and are at least as sensitive to small amounts of virus as living monkeys or mice. Damage or destruction of cultured cells by organisms is analogous to paralysis or death of infected animals. Effects are readily observed by low magnification.

Virus can be detected in various substances, such as feces, nerve tissue, or throat washings, and activity can be assayed. Organisms can be produced in great quantities for vaccines and investigation of drugs or other factors influencing growth. Neutralizing antibody can be titrated and the viral type determined. The type and amount of antibody that develops after infection or vaccination can be ascertained.

No single culture technic is universally used for research, diagnosis, and manufacture of preventive agents. Current procedures are of 2 main types, depending chiefly on [1] primary explants of human or simian tissue fragments or cells and [2] continuous cultivation of human cell stocks, from which subcultures are prepared as required.

PRIMARY EXPLANTS

The suspended-cell or suspended-fragment method of Maitland; the fixed-cell or fixed-fragment tube culture, roller or stationary; and the trypsinized fixed-cell culture of Dulbecco are used to obtain primary explants.

The method of *suspended cells or fragments* is easiest to prepare and also preferable for mass production of virus. Tissues are cut into fragments of about 1 cu. mm., placed in appropriate medium in a flat-bottomed flask, and kept at 35 to 37° C. Medium is replaced by fresh material every three or four days. Kidney tissue is most satisfactory. Phenol red is added to show changes in *p*H. As the virus attacks and destroys cells, production of acid diminishes or stops.

In *fixed-cell* culture, the roller tube allows cell damage by the organism to be visualized directly. Multiplication of virus is quickly recognized, specific nature determined, and infectivity assayed, as well as the antibody concentration of type-specific sera.

Bits of minced tissue are distributed in a thin film of heparinized chicken plasma previously spread over the test-tube wall. The plasma film is then clotted by chick embryonic extract, 1.5 to 2 cc. of medium is added, and the tube is stoppered. Cells readily migrate about the implanted fragments and may continue to multiply for weeks or months.

The most desirable tissues are human embryonic skin-muscle or lung and postnatal human or monkey kidney. Embryonic cells grow rapidly, and cultures can be inoculated in two or three days.

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very small viral inocula, and human kidney is excellent for isolation of virus in feces. However, uterine tissue is adequate and more easily obtained. Another substitute is human preputial tissue removed by circumcision.

Stationary culture is easily and rapidly prepared in large quantities. The method used for roller tubes is employed, except that 6 fragments or so are embedded in a row in streaked plasma or made to adhere by preheating the tube.

The *trypsinized-cell* culture of Dulbecco is used for precise determination of the number of infective virus particles damaging to cells in a given suspension. From 800 to 1,000 cultures may be prepared from renal tissue of 1 monkey.

A continuous monolayer of cells is grown on the bottom of a Petri dish, exposed to virus, and covered with nutrient agar to localize the organism in infected areas. Multiplication of virus is followed by destruction of adjacent cells, and plaques produced by single infective particles are visible in twenty-four to forty-eight hours. Pure-line strains are readily obtained for study of viral mutation, since descendants of a single plaque can be employed as inoculum for serial passage.

In the procedure modified by Youngner, minced kidney tissue is treated with trypsin solution, and digestion proceeds while the suspension is agitated in a Waring blender. Supernatant fluid is removed, and coarse material is separated by filtration through gauze until most of the cells are detached from the tissue.

Cells are pooled, centrifuged, and washed, and a suspension is prepared. Numbers are determined by counts of nuclei or optical density. For tube cultures, a suspension is adjusted to contain 600,000 cells per cubic centimeter, and 0.5 cc. of this is incubated to form a continuous layer as cells accumulate on the tube wall.

CELL STOCKS

Although normal and other malignant human cells may be suitable, cell stocks under continuous cultivation are usually derived from the HeLa strain of human cancer. The strain stems from epidermoid cervical tumor and has been kept in serial passage to the present time. Cells grow readily on a glass surface.

Stock cultures are maintained in square bottles of 200-cc. capacity. Containers are laid on 1 side of the bottle, and growth proceeds in about 6 cc. of medium. The mass is removed in seven to ten days and is treated with trypsin solution and agitated to break up cell clumps. The suspension is centrifuged, taken up in nutrient medium, counted, and adjusted so that 25,000 to 100,000 cells are placed in test tubes for incubation.

An alternate method omits trypsin. The cellular growth is scraped from the wall of the bottle, cut into bits, and placed on the wall of a culture vessel that has been previously wetted with the medium.

Different media are employed in turn. The first consists of human placental or adult serum or ascitic fluid, chick embryonic extract, and

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salt solution for active multiplication of cells. The second, containing synthetic solution and chicken serum, maintains cells without proliferation after inoculation of the virus.

Immunity and Vaccination

A. B. SABIN, M.D.
University of Cincinnati

DIFFERENT aspects of immunity could be considered rationally only after proof, in 1951, that all known strains of poliomyelitis virus from various parts of the world fall into 3 major groups: Brunhilde-like Type 1, Lansing-like Type 2, and Leon-like Type 3. Large epidemics are generally caused by Type 1 and occasionally by Type 3; as yet, none has been attributed to Type 2.

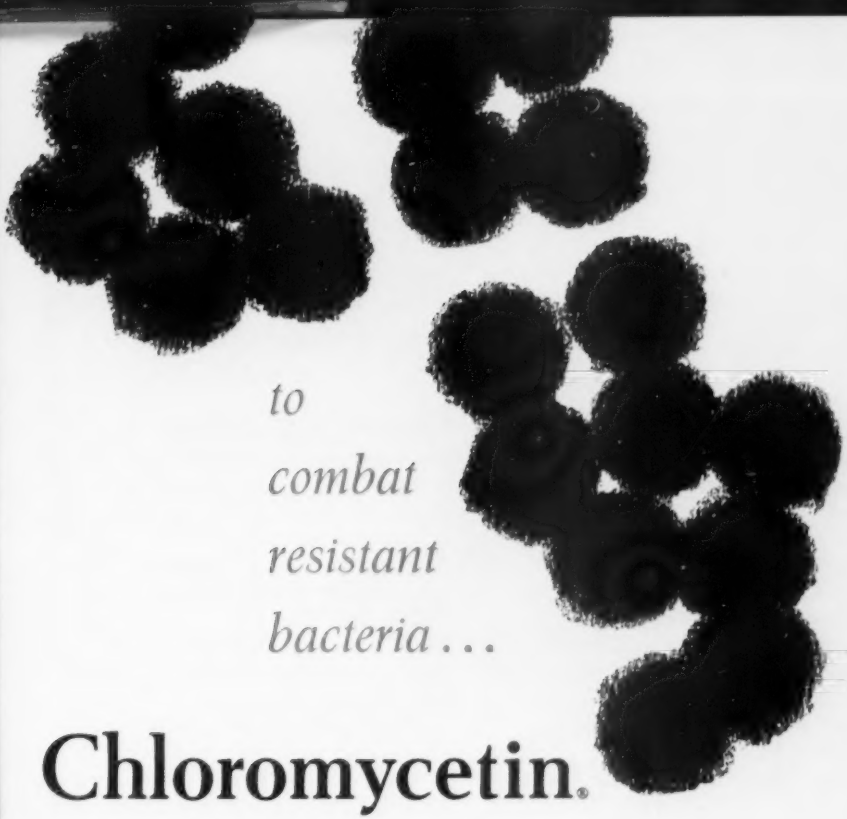
With few exceptions, antibody for the infecting strain of virus appears in serum as early as twelve hours after onset of symptoms and before paralysis and increases in titer for several weeks. As a rule, neutralizing antibody is limited to the infecting virus type. However, heterotypic responses may be observed. In some cases, Type 2 antibody appears one to three months after onset of infection with another virus. In others, Type 2 antibody appears or increases in the first two to four weeks of illness then vanishes or decreases within three months after onset, while the homotypic antibody remains high.

Antigenic relations between different types are further shown by development of complement-fixing antibody for the infecting and other groups in a large proportion of patients.

Most of the world population has acquired antibodies without recognizable symptoms—a fact proving widespread infection—but has not necessarily been without minor illness of some sort. Inapparent infections commonly produce as high antibody titers as does overt disease, but titers may be low. In cynomolgus monkeys with silent involvement after receiving oral virus, titers between 1:100 and 1:1,000 are usually associated with large doses of virulent strains, and titers of 1:25 or less are seen with either minute virulent doses or large amounts of avirulent organisms.

Among overcrowded people with poor living standards, such as Koreans, Okinawans, Japanese, Egyptians, Cubans, or Latin Americans in Texas, Type 2 antibody is acquired sooner and more extensively than other types. In primitive, isolated communities of North Alaska, Type 3 virus was imported to the Eskimos in about 1905, Type 1 in about 1915, and Type 2 in 1930. All forms spread widely for a short time, then disappeared.

In Pittsburgh, Dr. Jonas Salk observed no antibody for any type of virus in 60% of children between 3 and 8 years old. In Winston-Salem, N.C., Type 2 may cause rather high yearly rates of infection, while Types 1 and 3 are scarcely seen except in epidemic years. However, rates can be high for all 3 types with no epidemics; in French Morocco, incidence is approximately 75% in children of 2 to 4 years of age.



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CHLOROMYCETIN is a potent therapeutic agent and, because certain blood dyscrasias have been associated with its administration, it should not be used indiscriminately or for minor infections. Furthermore, as with certain other drugs, adequate blood studies should be made when the patient requires prolonged or intermittent therapy.

*Pratt, R., & Dufrenoy, J.: Texas Rep. Biol. & Med. *12*:145, 1954.

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Antibody titers may be elevated for many years without reinfection. For example, 52% of Eskimos tested nineteen years after the last probable exposure to Type 2 virus still had levels of 1:100, and data for Types 1 and 3 showed persistence for thirty years and longer.

Even silent infection seems to prevent subsequent paralyzing attacks for long periods. Probably less than 10% of immune animals can be reinfected with homotypic virus. However, limited reinvasion may be possible in animals or people with low-grade immunity. In Africa, Asia, and other regions where most children acquire antibodies early, disease is negligible and paralysis rare. Yet, virulent strains infect visiting foreigners with a high paralytic incidence.

The risk of acquiring paralytic poliomyelitis during a lifetime ranges from 1 in 100 to 1 in 100,000 or less in different population groups. The main objective of vaccination is to furnish long-lasting immunity by means of killed-virus preparations or living harmless variant strains. The greatest advantage of a killed-virus vaccine is complete lack of paralyzing capacity. Disadvantages are the requirement for preformed antigen in large amounts and for repeated injections and the risk of sensitization.

The obvious advantage of live vaccine is the possibility of prolonged immunity from a single, small, oral or parenteral dose, perhaps given in early infancy when protection by maternal antibodies is provided. The first consideration is safety. Paralytic potency of available strains may be modified, and naturally avirulent organisms may be found in healthy children.

Immunization with Living Virus

HILARY KOPROWSKI, M.D.
Pearl River, N.Y.

HUMAN beings have been immunized against poliomyelitis with oral doses of attenuated virus. The TN strain of Type 2 was employed. After passage through mice or cotton rats, organisms had little effect on nervous tissue of intracerebrally inoculated monkeys and induced no symptoms. However, animals could be protected against virulent homologous organisms.

Of 89 persons selected for trial, 85 had no antibodies against Type 2 virus; 18 of these subjects had no antibodies against any of the 3 types. Infected cotton-rat brain and spinal cord were made into a 20% suspension in distilled water, and 1 to 10 cc., usually 5 cc., was given by stomach tube or taken in milk. Most subjects were observed at least a year.

No illness resulted, and no viremia was detected in any of 66 individuals who were bled several times. In a few instances, no intestinal carrier state could be detected by isolation of virus from stools.

Homologous antibodies were observed in all cases as soon as seven days after administration of virus and generally within a month. Response was the same after 1 or several doses. Levels varied in different individuals but remained

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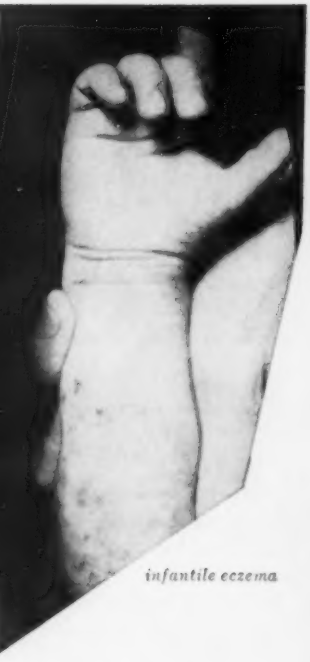

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unchanged, with 1 possible exception, during observation periods of twenty-six to forty-one months.

The next important objectives are [1] a stockpile of attenuated viral strains representing all 3 types and [2] more adequate criteria of safety for administration of live organisms.

Public Health Measures

A. M.-M. PAYNE, M.D.

Division of Communicable Disease Services, World Health Organization

RATES of poliomyelitis may be lowered not only by active immunization but by control of environmental hazards.

Measures against spread of infection—Both paralytic and nonparalytic cases should be reported. The latter are recognized by fever; headache; vomiting; sore throat; listlessness; stiff neck and back; pains in the back, neck, trunk, or limbs; and hyperesthesia, often with cerebrospinal fluid changes. Known contact with a paralytic case or residence in an epidemic area is also important.

The patient should be isolated at home, in a hospital or unit for infectious disease, in a hospital for poliomyelitis, or in a unit in a general hospital.

Throat discharges and feces should be disposed of quickly and safely. Soiled articles are promptly disinfected by heat.

Convalescents should not be moved to orthopedic or other hospital wards until the locally approved isolation period is complete. Ideally, poliomyelitis rehabilitation units should be separate. No infected person should associate with others for six to eight weeks from onset of disease.

Children with familial or other intimate exposure should be confined at home for twenty-one days, and adults should avoid close association outside the family.

Day nurseries should be closed when a pupil is affected. Staff, pupils, and their relatives follow the same rules as those for family contacts. Residential nurseries, schools, and children's camps should be under observation for twenty-one days after infection appears. No residents should leave or new members be admitted.

The general public should be advised to wash hands frequently, protect food from flies, thoroughly wash fruit and other uncooked food, and avoid known contacts for three weeks.

Febrile or other illness during an epidemic requires bed rest or at least avoidance of overexertion for a week. Travel to or from infected communities is discouraged.

Measures against paralysis—During epidemics, tonsils and adenoids are not removed electively. Diphtheria and whooping cough immunization may continue during the poliomyelitis season. However, adsorbed combined vaccine is discontinued during a minor epidemic, and all vaccination is suspended in severe outbreaks.

Persons intimately associated with a poliomyelitic patient should avoid fatigue for five to twenty-one days after exposure.

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Case MM-287

THE CLUE

ATTENDING M.D: I would like you to see a 30-year-old woman who has moderately severe, sharp, crampy pain in the right lower quadrant which appeared suddenly two days ago and has become more intense. She has slight low back pain but no other symptoms. Her temperature is 100° F. This is the first episode of this type, and the patient has not had nausea or vomiting.

VISITING M.D: Is the rectal examination normal?

ATTENDING M.D: Yes. Gastrointestinal and genitourinary investigations did not disclose anything unusual, such as a palpable mass. She has only slight abdominal rigidity in the right lower quadrant. Her appendix has not been removed, and her last menstrual period was delayed.

PART II

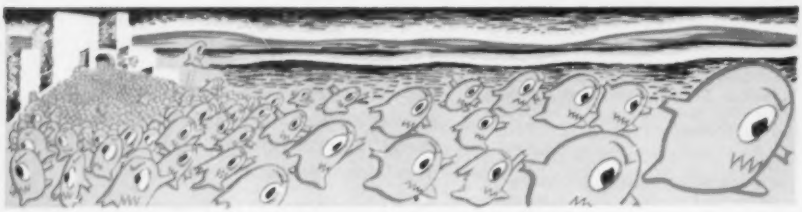
VISITING M.D: *(A few minutes later, examining the patient)* Physical and neurologic examinations are normal. The patient is menstruating slightly, but pelvic examination is normal. *(To patient)* When did your period begin?

PATIENT: It was about four or five days late, and I have been flowing for five days. My periods are usually quite regular, but I think this is a normal period in spite of the delay.

VISITING M.D: The period was about five days late and preceded the pain by three days. The patient obviously has intense pain. I see that she has received codeine without relief of the distress. The condition must be either . . .

PART III

VISITING M.D: *(Continuing)* . . . a rupture or impending rupture of



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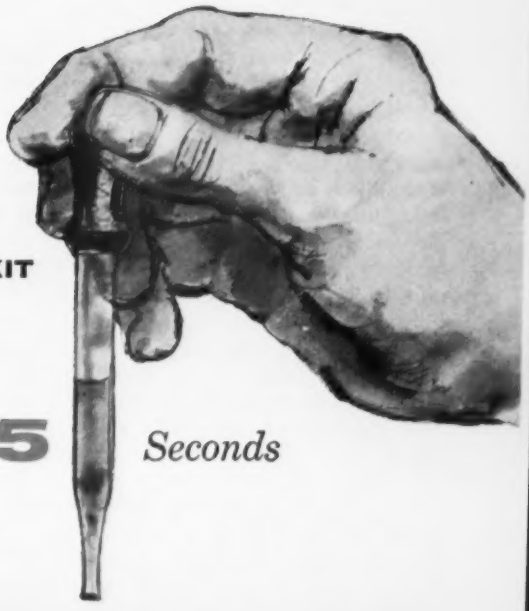

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ectopic pregnancy, a first attack of acute appendicitis, a ruptured ovarian cyst, or pelvic inflammatory disease. What are the laboratory data?

ATTENDING M.D: White blood and differential count, urine, hemoglobin sedimentation rate, hematocrit, and the chest and abdominal roentgenograms are all normal.

VISITING M.D: The symptoms, then, are slight fever and severe, crampy pain beginning suddenly after a menstrual period that was delayed.

ATTENDING M.D: That's right.

VISITING M.D: No objective evidence points to pregnancy. I believe that surgical exploration should be done at once, even though the woman has never had amenorrhea before. I think we will find . . .

PART IV

VISITING M.D: *(Continuing)* . . . an ectopic pregnancy and a rupture.

ATTENDING M.D: We'll see if your diagnosis is correct.

SURGEON: *(At surgery, same day)* There is at least 0.5 liter of blood in the peritoneal cavity, with a small rupture in the right tube with ectopic pregnancy. Frozen sections of the material obtained by curettage just a few minutes ago showed decidual endometrial reaction. But even if this had been normal, we would have gone ahead with surgery.

VISITING M.D: Pain, bleeding, amenorrhea, and pelvic mass are the 4 cardinal signs with this condition, but, as you can see, if you wait for the cardinal signs to appear, the patient's life is jeopardized. Pain almost always occurs, and bleeding is quite constant and often precedes pain, as in this case. Pelvic mass is uncommon in my experience, and amenorrhea may be misinterpreted as a late abnormal or a normal, scanty period. Pain becomes abruptly severe with massive hemorrhage, and shock ensues. Sometimes, it is impossible to get enough blood into the vein in time, and surgery may be a lifesaving necessity, even with shock. This is a serious illness and a surgical emergency. The bleeding in this woman has been slow but most likely would have become rapid soon. Some of the rapid pregnancy tests are occasionally of help.

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Medical Forum

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Primary Prosthesis for Femur Fracture*

QUESTION: What is the best method of treating fractures of the neck of the femur in old people?

Comment invited from

EDWARD L. COMPERE, M.D.
W. RUSSELL MAC AUSLAND, M.D.
AUSTIN T. MOORE, M.D.
IRWIN B. HORWITZ, M.D.
MILTON I. LENOBEL, M.D.
HARRY E. BELLER, M.D.
RONALD S. HAINES, M.D.
HENRY MILCH, M.D.
CLYDE W. DAWSON, M.D.

► TO THE EDITORS: I am in agreement with the position taken by Drs. Charles H. Bradford, John J. Kelleher, Paul I. O'Brien, and Richard M. Kilfoyle. Many patients 65 years of age or older who suffer the misfortune of a fracture of the neck of the femur should be treated by removal of the head of the femur and replacement with one of the many varieties of prostheses. The prostheses which have been most successfully used in this country are those with a long stem which is introduced into the intramedullary canal of the shaft of the femur. The Moore prosthesis is made of Vitallium and is lighter than any prosthesis made of stainless steel. The angle formed between the short Vitallium neck and the shaft of the femur is anatomically correct.

Use of a prosthesis will enable early mobilization of the patient and is the most desirable method for the elderly patient when prolonged bed rest would be most undesirable. It should be kept in mind, however, that the use of a Smith-Petersen nail with a plate attached to the side of the femur will also make it possible for these older patients to become ambulatory in as short a period of time as would replacement of the femoral head by means of a prosthesis. I have had patients who were more than 85 years of age when their intracapsular fracture of the hip was treated by means of the nail-plate combination. They were able to be up in a wheel chair within one or two days after surgery and to walk bearing full weight within eight to twelve weeks.

It is not wise to generalize too much when we consider the question of treating fractures of the neck of the femur in old people. Almost every fracture is a little bit different from any other. Patients differ from the standpoint of what they can tolerate and in the neces-

*Modern Medicine, Feb. 15, 1955, p. 127.

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sity for early ambulation. The wise orthopedic surgeon will consider every phase of the problem as it affects each individual patient before arriving at a decision.

EDWARD L. COMPERE, M.D.
Chicago

► TO THE EDITORS: The treatment of hip fractures in the elderly presents a problem, particularly when the fracture is located in the subcapital region. Some patients are in such poor physical condition that surgery is definitely contraindicated. Other patients, who were seriously incapacitated before the fracture occurred, cannot be rehabilitated. Internal fixation may be considered only in selected patients who are not too elderly and are still active, and who are in physical condition to withstand this traumatic operation as well as the prolonged postoperative immobilization. Moreover, the prognosis for successful nailing is not favorable in aged patients because of the danger that a painful nonunion or necrosis of the femoral head will ensue. The question then arises as to whether the patient can tolerate further surgery.

The use of a prosthesis in the treatment of fractured hips in aged patients represents, in my opinion, the greatest advance in hip surgery in recent years. Prosthetic reconstruction is indicated in the patient with a short life expectancy and in the less elderly patient when the prognosis for successful internal fixation is poor. It is a method which ensures relief from pain for the aged person who is otherwise physically incapacitated.

The replacement operation is particularly suitable for the elderly person. The technic is simple. The patient is relatively free from pain postoperatively. Bed rest is required for only a few days and early ambulation is possible.

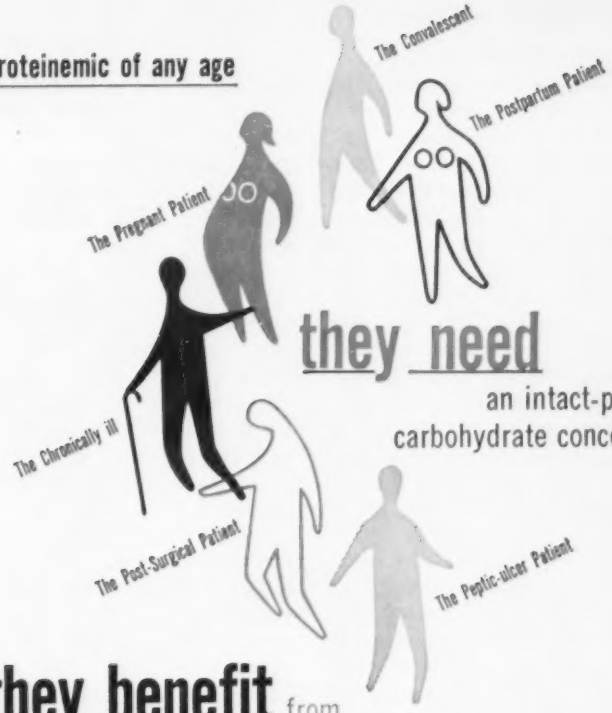
Prosthetic methods have been in use for relatively few years, but there have been several refinements in technic and improvements in prostheses. The posterior approach advanced by Gibson is recommended. This procedure permits proper seating of the prosthesis and eliminates the danger of subsequent dislocation of the new femoral head. Early in my experience, a Judet acrylic prosthesis was used, and later nylon was tried, but both types have been discarded in favor of the metallic intramedullary prosthesis.

W. RUSSELL MAC AUSLAND, M.D.
Boston

► TO THE EDITORS: The ideal method of treatment for fractures of the neck of the femur in old people should [1] be reasonably safe; [2] entail very little shock in its application; [3] allow early ambulation without pain; [4] require a minimal amount of hospitalization and very little nursing care; [5] be relatively inexpensive; and [6] continue to give satisfactory service throughout the remainder of the patient's life.

Of all of the known methods of treatment to date, only replacement of the femoral head with a properly designed prosthesis appears to

The hypoproteinemic of any age



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meet all of these requirements. The method has not been used sufficiently long to make final conclusions.

The Self Locking Vitallium Prosthesis that I designed has been used in 110 patients in the past three years. In general, the results are increasingly satisfactory. The operation should be done with precision and meticulous care; otherwise, a loose fit, a fractured bone, a dislocated hip, or some other complication may result. We have had 1 operative death, 2 minor infections, 2 dislocations in early cases that were done improperly, but no broken bones during application of the prosthesis.

A fairly large number of patients have been inmates of our state mental institution. We have very little postoperative control over these patients and many of them walk early without support. The method saves the state financially, relieves a great deal of nursing care, and at present is being considered as the treatment of choice.

The posterior approach or southern exposure is a great advantage and usually the operation can be completed in thirty-five to forty-five minutes. The approach is almost bloodless, and the small sensory branch of the sciatic nerve to the posterior hip capsule is resected.

When a patient is in vigorous health, has a fairly long life expectancy, and the fracture line is more horizontal and below the subcapital region, we perform a hip-nailing operation using 4 or more Moore Adjustable Nails. With this procedure we insist on early perfect reduction, perfect fixation, and prolonged postoperative protection with freedom from full weightbearing until union is solid and creeping substitution is complete. In this way, we have many excellent results without aseptic necrosis of the head.

Elderly patients with short life spans ahead of them, who have high subcapital or comminuted neck fractures and little ability to walk without the aid of crutches are considered to be ideal candidates for prosthesis.

When possible, weightbearing is protected until bone grows in and all about the prosthesis and roentgenograms show increased density in the stress areas. In this way, the prosthesis literally becomes embedded in the bone and frequently becomes a part of the living bone. Under such circumstances, it is conceivable that the prosthesis can last indefinitely and give good service for the remainder of the patient's life.

AUSTIN T. MOORE, M.D.
Columbia, S.C.

► TO THE EDITORS: It is our opinion that the best method of treating fractures of the femoral neck in the aged is that method which will most rapidly return the injured person to unaided weightbearing. The only method which accomplishes this at present is the replacement of the fractured femoral head by a metal prosthesis.

Our experiences extend back over the past four years during which time over 200 prostheses

(Continued on page 186)

have been inserted for acute and nonunion fractures of the femoral neck.

The primary prerequisite for the use of the procedure is that the individual was mentally and physically capable of walking before the occurrence of the fracture. A previously restricted bed patient who sustains this type of fracture is not a candidate. The value of the procedure increases with the patient's age, since the postoperative disability period is so very short. The procedure may be used in most people who are 65 years of age or over.

Granted that the proper procedures of insertion are carried out according to our technic, the patient can be ambulatory in two weeks or less postoperatively. Full weightbearing is then insisted upon. The Fred Thompson type of prosthesis has been found most satisfactory. The anterior femoral incision is used. No postoperative fixation is required. We have had no dislocations as a result of this method. The procedure is well tolerated by any person, regardless of age, who might endure a routine internal fixation method.

There is little cause for dissension with a procedure that allows an individual of 80 years or more who has sustained a fracture of the femoral neck to be walking, unaided, within two weeks postoperatively. Good to excellent results will be obtained in approximately 80% of patients.

IRWIN B. HORWITZ, M.D.
MILTON I. LENOBEL, M.D.
St. Louis

► TO THE EDITORS: The appeal by Dr. Bradford and his associates for consideration of a prosthesis as the primary operation in certain hip fractures comes as no revolutionary suggestion to most orthopedic surgeons. In private interchange at meetings and conventions, many orthopedists have talked of this for at least the past three years, although Dr. Bradford's series of 51 is one of the largest, if not the largest, reported.

To date, in our advance toward solution of the problem of the fractured hip, no prosthesis is the equivalent of a united hip, secured by the best judgment of the individual surgeon in the particular case. This must continue to be the guiding principle, and this must be so publicized and reiterated as not to imply by silence approval of "gadgetry." The huckstery which greeted the hip prostheses and the dozens of such prosthesis placed on the market gave the unfounded and undesirable impression that steel or Vitallium had supplanted bone and sinew.

With the more rigid and critical standards for proper reduction, and absolute conscientiousness in interpreting such a reduction, even vertical transverse subcapital fractures will do better with a hip nailing than with a prosthesis. The operative time and shock is much less in such a procedure than in a replacement. When reduction cannot be secured, exposure of the entire head and neck is still worth while for apposition of the fractured parts and correct nailing before a prosthesis is resorted to.

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Let us not sit in transcendental judgment as to age, debility, hopelessness of a fracture, and by inference, life expectancy of a patient, in order to justify a procedure which can be a boon rather than an abuse.

HARRY E. BELLER, M.D.
Miami

► TO THE EDITORS: The best method for treating a fracture of the neck of the femur in an old person is the one most likely to result in healing of the fracture in satisfactory alignment. That method is closed reduction of the fracture and fixation with some device such as a Smith-Petersen nail, with or without an intertrochanteric plate depending upon the situation. The incision is small, especially if an intertrochanteric plate is not necessary, no shocking manipulations are necessary, the blood loss is minimal, and the patient is able to sit up as soon as he recovers from the anesthetic. Immediate mobilization of the hip and knee is possible although weightbearing is not permitted until the fracture heals. Dangers from infection are negligible and most patients tolerate this surgery extremely well. Experience has proved that a normal femoral head attached to the shaft in a normal hip capsule is infinitely better than the best prosthesis ever devised by man.

Treated by this method, between 50 and 75% of these elderly patients do have hips that approach the normal, that is, hips which have a satisfactory range of motion and upon which the patient can walk without using a crutch or cane. Statistical studies will show that the results from using prostheses as primary treatment are accompanied by many complications such as wound infections, dislocation, calcifications about the hip capsule, and others. It is unusual for a patient with a hip prosthesis to be able to walk any appreciable distance without using either cane or crutch. It would, therefore, appear obvious that hip prostheses should not be used for primary treatment but should be employed only for those particular patients in whom a satisfactory result cannot be accomplished by the conventional treatment outlined above.

RONALD S. HAINES, M.D.
Phoenix

► TO THE EDITORS: Treatment of fractures of the femoral neck in old people will differ depending upon [1] the outlook for ultimate normal ambulation and [2] the patient's ability to withstand the rigors of necessary operative intervention.

When general condition of the patient contraindicates major surgery, the simplest form of skeletal fixation or a rapid transpositional osteotomy would seem to be the procedure of choice in order to minimize pain and the period of bed rest. It is, however, in those patients in whom surgery may be undertaken that fracture of the femoral neck has earned the cognate designation "the unsolved fracture." The unsolvable part of the

(Continued on page 192)

Lederle

problem lies not in the failure of mechanical measures to control the fracture fragments but in the inability to evaluate the biologic elements—the degree of impairment of circulation to the femoral neck and the extent of the trauma to the articular surfaces—which determine the ultimate functional result.

Neither adequate fixation nor transference of weightbearing accomplished by osteotomy has in any manner mitigated the danger of aseptic necrosis or late development of traumatic arthritis which fracture of the femoral neck imposes. It is in this consideration that the indications for more radical treatment by reconstructive operations arise. Only 2 procedures—prosthetic replacement of the fractured head and neck and the resection-angulation operation described by the writer—meet these indications.

Of the prosthetic appliances, only those of the stem type should be considered. On purely a priori grounds this procedure is as clearly indicated in traumatic cases when preexisting disease of the acetabulum can be definitely excluded as it is contraindicated in the arthritic cases when concomitant disease of the acetabular cavity and femoral head must be predicated. As is indicated by Dr. Bradford, the early results of such prosthetic replacement are extremely encouraging. The method obviously avoids the reproach of nonunion or aseptic necrosis of the head. Whether it will similarly eliminate the danger of late posttraumatic arthritis can be determined only by a review of large series of cases studied over a longer period of time than has at present been possible. In one instance, I have already been forced to remove a prosthesis because of intractable pain and limitation of motion.

When the prosthesis has failed or is not applicable, the resection-angulation operation will prove to be of inestimable value as regards both the relief of pain and restoration of necessary function. Motion has been begun shortly after the immediate postoperative period and ambulation has been possible within a period of three to four weeks. This operation has been employed in 10 patients, in 9 as a secondary procedure after failure of earlier fixation operations and in 1 as a primary operation. In 9 patients excellent return of flexion and extension was attained with inconstant reestablishment of rotation. There was complete pain relief in 8 with persistence of slight pain in 1 patient and moderate pain in another. Limp, of course, occurred in almost all patients.

HENRY MILCH, M.D.
New York City

► TO THE EDITORS: It is my opinion that the treatment of fractures of the neck of the femur by immediate prosthetic replacement of the head of the femur should be reserved for a very few selected cases. It has been my experience that a fracture of the neck of the femur near the head will heal if completely reduced and immobilized by means of a well-placed Smith-Petersen nail. When the angle of inclina-

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tion of the fracture surface is more than 60°, I advise and use an immediate bone graft combined with a Smith-Petersen nailing where complete reduction of the fracture is obtained.

When an arthrotomy of the hip joint is necessary to obtain complete reduction, a Jewett modification of the Smith-Petersen nail should be combined with a geometric osteotomy as described by Dickson. The Dickson type of osteotomy, combined with a bone graft, is very useful in the treatment of early aseptic necrosis of the head of the femur. I use a prosthetic replacement in those patients who demonstrate an old nonunion or show a delay in union with aseptic necrosis and traumatic arthritic involvement of the hip joint. Those patients who have experienced complications after an attempt at a Smith-Petersen nailing present many of the above modifications of destructive change of the head of the femur and can be offered a functioning hip by the use of a prosthetic replacement.

Many elderly people have such poor bone density that they offer inadequate stability of the replacement stem in the intramedullary canal of the femur. When prosthetic replacement is used in such patients, extensive complications may arise, including fracture of the shaft, extrusion of the stem of the replacement through the shaft of the femur, and intrusion of the ball of the prosthetic replacement through the acetabulum roof.

It is my opinion that whenever normal or nearly normal bony tissue is available to make a functioning joint, it should be used rather than metallic substances.

CLYDE W. DAWSON, M.D.
Columbus

Sudden Death in Infants*

QUESTION: What is the most common cause of sudden death in infants?

Comment invited from

PETER GRUENWALD, M.D.
PAUL FREUD, M.D.
JOHN S. KRUGLICK, M.D.

► TO THE EDITORS: Most physicians are not aware of the magnitude of the problem posed by sudden death in infancy; only medical examiners or coroners see a large number of these cases.

Meningitis, tuberculosis, congenital heart disease, and so on account for a few of these deaths. The great majority present a uniform but mysterious picture. Descriptions of the pathologic findings as presented by Dr. George J. Carroll and other investigators are essentially in agreement; only the interpretation varies.

The possibility of virus infection has occurred to most investigators. This is supported by frequent findings of a prodromal "cold" or an "upper respiratory infection." In instances of a fulminating disease with severe respiratory distress and death within a few hours, the pathologic findings are identical with those in sudden death.

It is not at all certain that the disease causing sudden death or

*MODERN MEDICINE, Feb. 1, 1955, p. 108.

rapidly fatal illness in infants has a uniformly lethal course. In fact it is quite likely that the majority of infants affected by it manifest merely a minor respiratory disease. This, if true, could effectively obscure any clues which might aid an epidemiologic study. On the other hand, one would then like to know what factors determine the severity of the disease.

These considerations are mentioned here only to point out the importance as well as the great difficulties of the problem. It is my feeling that only a large-scale study including pediatric, pathologic, microbiologic, and epidemiologic methods as well as the study of possible nonfatal cases will solve this riddle.

PETER GRUENWALD, M.D.
Brooklyn

► TO THE EDITORS: In contrast to adults, sudden death in infants is not caused by any of the conditions seen in the aging organism such as atherosclerotic heart disease, hypertension, or cerebral hemorrhage.

Apart from prematurity, trauma, intake of poisonous substances, and aspiration of vomitus or foreign bodies, sudden death in infants is usually due to infection. Frequently there are no preceding signs, hence prophylaxis is impossible. Smothering or suffocation—extremely rare in infants—is incorrectly attributed to the fact that the face of the baby is found covered by blanket or pillow.

Three types of sudden death are usually seen. One occurring in the newborn is illustrated by the following case history:

A mother had left the hospital with her 6-day-old infant. The baby had regained his birth weight of 7 lb. 6 oz. after an initial loss of 4 oz. In the afternoon of this day the baby was examined and found entirely normal. There was no reddening or swelling of the navel. The baby was taking his formula well and was fed the last time on the next morning at 2 A.M. At 6 A.M. he was found dead in bed. The parents blamed the death on smothering, because the face was turned toward the mattress. Autopsy revealed a septic thrombosis of the umbilical vessels, congestive hemorrhages, and edema of the viscera with *Bacterium coli* as the causative agent.

This case is representative of sudden death occurring in newborn infants when the umbilicus is the focus of infection, even if there are no signs of omphalitis. This infection is always caused by bacteria.

The second group usually comprises normal, well-nourished infants up to 6 months of age. Again, there are no premonitory symptoms and the babies are found dead in bed. Necropsy reveals bronchopneumonia, congestion, edema, and areas of hemorrhage in the internal organs, especially in the lungs. The normal follicular picture of the lymph nodes and spleen cannot be seen. There is also cellular infiltration. A virus infection is suspected, but a definite etiology can never be established.

A third rather rare group consists of infants with widespread ec-

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zema which suddenly disappears. Just after its fading these children suddenly die. The pathology is the same as in the other 2 groups and is identical with the findings in children expiring from anaphylactic reaction after receiving animal serum or toxoid injections.

These pathologic findings recall the experience of old authors who explained this type of sudden death by the thymicolymphatic state. The question arises whether death in all these cases is due to overwhelming infection or to sensitization by infection producing sudden fatal anaphylaxis.

In the future, improved methods of examination may help to detect infection in time and to permit preventive treatment for at least some of these cases.

PAUL FREUD, M.D.
New York City

► TO THE EDITORS: Those of you who have not had a sudden death occur in your practice have escaped a very traumatic experience. I recall so vividly an excited voice on the phone shrieking, "My baby is dying!" The mother, hearing a slight noise, had gone into the 4-month-old infant's room. The child was bleeding from the nose and mouth, gasping for breath, and died before the parents could get to the hospital. The sadness of the parents was more than matched by my own depression.

Results of postmortem examination were essentially normal except that the thymus gland was somewhat enlarged and friable; this may have been a postmortem change. This child had been fluoroscoped for possible thymic enlargement at 1 month of age but none was found.

A review of the literature at that time was unsatisfactory. I cannot accept virus pneumonia as the cause for this condition. It seems to me that death must have been due to sudden collapse of a vital center, reflex vagal inhibition, failure of the respiratory center, a peripheral vasomotor collapse, an adrenal cortex failure, even a thymus gland condition—perhaps any and all—but not a virus pneumonia.

Whatever the cause, I hope it is soon determined and is something preventable. My coronaries could not stand another episode such as this.

JOHN S. KRUGLICK, M.D.
Phoenix

Management of Breech Presentation*

QUESTION: What is the best management of breech presentation?

Comment invited from

RUTH ELLIS LESH, M.D.
R. E. GILLETT, M.D.
PHILIP H. ARNOT, M.D.
LEONARD B. GREENTREE, M.D.
MELVIN SCHUDMAK, M.D.

► TO THE EDITORS: In the management of breech presentation, it is necessary to diagnose the position as early in the course of labor as possible. Pelvic measurements and the contour of the maternal pelvic soft parts assume a much greater

*MODERN MEDICINE, Feb. 1, 1955, p. 127.

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importance in breech presentation than in vertex. A cardinal principle is never to rush a breech delivery. The membranes are preserved as long as possible. This will assist in dilatation of the cervix which must be complete before delivery or extraction is attempted. The fetal heart should be carefully and frequently checked during breech labor.

Adequate sedation assists dilatation. Adequate anesthesia is important because, with complete relaxation, the normal mechanism of breech delivery usually proceeds with assistance from the operator, thus making interference unnecessary.

The shoulders are usually in the transverse diameter and may be rotated so that the anterior arm may be extracted by pressure on the pectoral muscles. The shoulders may then be turned and the other arm delivered similarly in the anterior position.

The occiput must be maintained in an anterior position. The head must be flexed by lowering the chin, the perineum retracted as much as possible, and the infant's airway cleared. There is then time to deliver the head manually or to apply forceps to the aftercoming head without undue haste. At this point a scrubbed assistant is helpful but not always available in the small hospital. A sterile towel may be used as a sling around the infant's body, and an unscrubbed assistant may thus support the infant's body while the head is being delivered.

The useful maneuver described by Dr. E. I. Ostry allows for more favorable flexion of the head by dropping the body when the forceps are applied. This procedure may be carried out when no assistant is available.

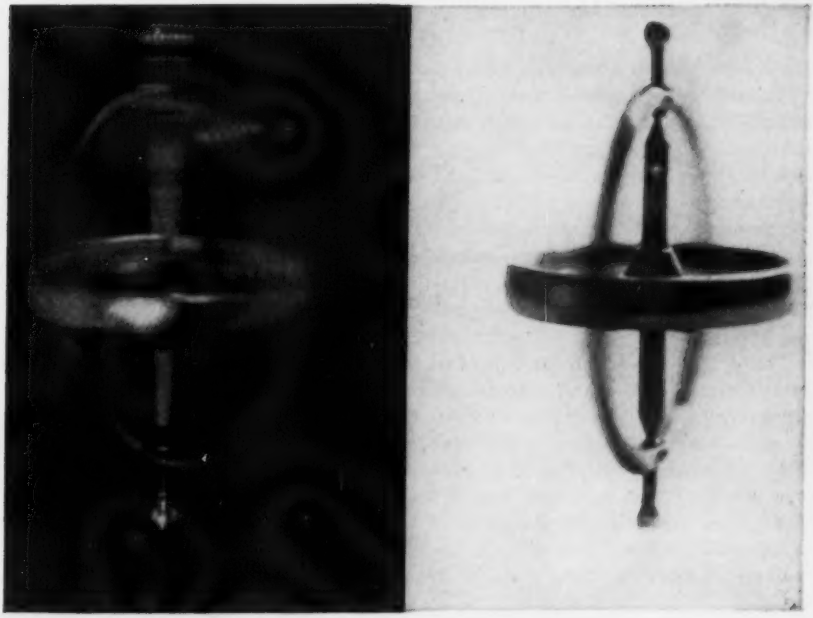
Experience has taught me that the most important single factor in the management of breech labor is deliberate assistance of the normal mechanism.

RUTH ELLIS LESH, M.D.
Fayetteville, Ark.

► TO THE EDITORS: I always approach a breech presentation with more fear and timidity than any other obstetric situation that I know of. In this condition a little foresight is worth more than an awful lot of hindsight.

Accurate evaluation of factors that may lead to dystocia is extremely important and a recognition of cephalopelvic disproportion at the onset of labor is paramount. In breech presentations, time does not permit molding of the fetal head and even minor degrees of cephalopelvic disproportion are better treated by cesarean section in most instances. Prolapse of the umbilical cord and fetal death from compression of the cord are frequent complications of breech presentation and warrant a close check on the fetal heart rate and a sterile vaginal examination if there is any evidence of fetal distress.

The actual delivery should be conducted in such a manner as to minimize trauma to the infant. Plenty of time should be allowed for the presenting breech to iron out and dilate the birth passageway, and I personally feel that cervical



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resistance should be minimized by adequate anesthesia. Ample time should be taken to accomplish the delivery. I believe that the routine use of Piper forceps when there is resistance to the delivery of the aftercoming head is a material aid in minimizing the dangers of nerve palsy and other traumatic complications that so often plague breech deliveries.

After the face and mouth are exposed, one may take plenty of time in effecting the delivery of the head as long as the mouth and respiratory passages are cleared of mucus and the infant is able to breathe.

In most instances, episiotomy is a valuable adjunct; less time is involved in delivery.

R. E. GILLETT, M.D.
Spokane

► TO THE EDITORS: We are conservative; we give Seconal or Nembutal and Pantopon during the first stage of breech presentation. Either may be repeated. Demerol is occasionally given as a repeat for Pantopon.

When fully dilated, the patient is put on the table, given gas with pains, and encouraged to work. We do not use stirrups but hold the legs up in lithotomy position during every pain and allow the patient to rest them on the table between pains. This is much more comfortable and restful for the patient.

As long as the breech is advancing, we leave well enough alone. Episiotomy is done under local anesthesia when the buttock is distending the vulva.

In the frank breech, we allow the infant to deliver spontaneously as far as possible but usually have to free each leg when the knee has reached the vaginal orifice or just below.

Then, with a towel around the baby's feet to provide a firm grip, we pull well downward and backward until both scapulas can be seen. Usually the posterior arm is sought but if this cannot be delivered readily, we deliver the anterior arm, the baby's body being swung to the opposite side and forward in either event. The other arm is delivered and pressure is then made suprapubically by a strong assistant. With the baby's body straddled over the left arm and two fingers held firmly against the anterior lip to prevent extension of the head, gentle traction is made with the fingers of the right hand over the shoulders. The pull is first made downward and then gradually forward as the head comes over the perineum. We seldom use forceps on the aftercoming head.

In the case of a single or double footling we deliver the baby by pulling down on the foot or feet until the scapulas show and then proceed as described above.

PHILIP H. ARNOT, M.D.
San Francisco

► TO THE EDITORS: There is no question but that the increased fetal mortality associated with breech delivery can be materially reduced by the early recognition of pelvic disproportion and soft-tissue dystocia. It is frequently said that there

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is no trial of labor in the breech, and this, strictly speaking, is true. When there is clinical or radiologic evidence of true or borderline bony disproportion in the breech, an elective cesarean section is indicated.

It is in these cases of abnormal presentation that x-ray pelvimetry becomes a most valuable adjunct to the obstetrician's examining finger in evaluating the possibility of fetopelvic disproportion. One is sometimes justified in feeling his way along early in the first stage of labor. When contractions are of poor quality and dilatation and descent are slow, particularly in the presence of such factors as previous stillbirth, sterility, and advanced age, cesarean section must be considered. The "assisted" breech delivery is usually the method of choice while the breech extraction is reserved for those cases in which further prolongation of labor would endanger the mother or fetus.

In recent years I have been much impressed by the Burns method of delivery of the aftercoming head. The child's head is allowed to hang vertically from the vulva as soon as the arms and shoulders are delivered. The weight of the child's body gently pulls the flexed head into the true pelvis behind the symphysis. The delivery is then completed by combination of suprapubic pressure with the left hand while the right hand clasps the child's ankles keeping the trunk gently in traction. The feet and trunk are then carried upward in a semicircle toward the mother's abdomen. Flexion of the child's head is readily maintained throughout delivery of the head in this fashion.

Dr. Ostry's method of forceps delivery of the aftercoming head, after allowing the infant to hang in the Burns position, seems physiologically sound and should be a valuable aid in breech delivery.

LEONARD B. GREENTREE, M.D.
Columbus

► TO THE EDITORS: The following pertinent points in the management of breech presentation will help reduce fetal wastage:

- The cervix should be completely dilated before attempting delivery, particularly with footling and premature breeches.
- Sedation should be least near the end of the first stage of labor.
- The patient's buttocks should be well down over the end of table.
- Local infiltration of 1% Novocain and a very deep episiotomy with the breech crowning, plus complete anesthesia as the infant's extremities are delivered, will facilitate delivery.
- After the lower extremities are liberated, the freedom of the umbilical cord is checked.
- The infant's back is kept toward the mother's front.
- The anterior arm is delivered first, after the scapula has emerged from below the symphysis.
- Delivery of the posterior arm as it lies, without rotation of the trunk, will minimize brachial plexus injuries.
- As soon as both upper extremities have been delivered, the hand is placed in the vagina to locate the

FIRST REPORT

The spotlight of research is being turned on Lecithin —a natural phospholipid

Physiologic Role of Phospholipids

Phospholipids or phosphatides (lecithin, cephalin, sphingomyelin) are eliciting increased interest in medicine because they apparently are intimately connected with fat metabolism, and especially the transport of lipids in the blood. They are considered to function as emulsifying agents and stabilizers for fat and fat-like substances, such as cholesterol, in the blood serum.

How vital this function is will be evident from a view generally held by investigators that instability of the lipids in the serum-lipid emulsion is one of the most important contributing causes of atheromatous deposits in vessel walls.

An excellent source of lecithin is Glidden's "RG" Oil-free Soya Lecithin, a highly purified extract containing a minimum of 95% phospholipids. It is packed in a specially designed 8 oz container to maintain its purity and freshness and is available at your drugstore.

Dosage: Investigators of lecithin have used quantities from 7.5 to 30 grams daily in divided doses. (3 teaspoonfuls equal 7.5 grams.)

Administration: "RG" Lecithin is presented in palatable granules which may be taken plain, in milk, or sprinkled on cereal.

Literature available on request.

Bibliography: 1. Duff, G. L., and Payne, T. P. B.: J. Exper. Med. 92:299, (Oct. 1) 1950. • Schettler, G.: Klin. Wchnschr. 30:627 (July) 1952. • 3. Gertler, M. M.; Garn, S. M., and Lerman, J.: Circulation 2:205 (Aug.) 1950. • 4. Ahrens, E. H., and Kunkel, H. G.: J. Exper. Med. 90:409 (Nov. 1) 1949. • 5. Boyd, E. M.: Proc. & Trans. Roy. Soc. Canada 31:11 (May) 1937. • 6. Gertler, M. M., and Oppenheimer, B. S.: Geriatrics 9:157 (April) 1954. • 7. Kellner, A.; Correll, J. W., and Ladd, A. T.: J. Exper. Med. 93:385 (April 1) 1951.

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infant's mouth. The infant is allowed to straddle this forearm. With the opposite hand above the symphysis, gentle pressure will flex the head in the pelvis allowing a clear air passage for the infant. Actual delivery of the infant's head may be accomplished either spontaneously or with any forceps with which the operator is familiar.

• Perineal retraction will facilitate establishment of an airway if difficulty is encountered delivering the head.

• After changing gloves, the placenta is delivered and the uterus, particularly the lower uterine segment, is explored manually for rupture. An intravenous oxytocic is given while exploration is being done.

• With good light and a vaginal retractor, the cervix and vagina are explored for tears before repairing the episiotomy.

MELVIN SCHUDMAK, M.D.

Baton Rouge, La.

Management of Ringworm of the Scalp*

► TO THE EDITORS: The comments from 8 practicing dermatologists on ringworm of the scalp had nothing new to offer *(Modern Medicine,* Feb. 1, 1955, p. 178). The authors talk about fungistatic and fungicidal agents for the local treatment of ringworm of the scalp. Ringworm fungi upon the human skin cannot be killed by any known means within permissible therapeutic limits. It should be understood that advertising of fungistatic and fungicidal drugs, in any galenic form, refers exclusively to test-tube findings.

Until my publication on selective chemical epilation *(Urol. & Cutan. Rev.* 55:539-550, 1951), only one efficient treatment of ringworm of the scalp was recognized: total x-ray epilation. This latter method is technically difficult with children under 5 or 6 years of age.

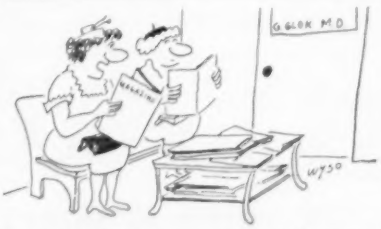
Selective chemical epilation obviates total epilation. Treatment requires two to four weeks instead of months and is effective for individual and for mass therapy.

According to the official report of the health officer at Sault Sainte Marie, Canada, sent in May 1951 to the Canadian Ministry of Health, 551 children in that community with ringworm of the scalp were cured within six weeks by selective chemical epilation. Numerous communications from dermatologists in this country confirm the Canadian experience and state that selective chemical epilation represents the greatest single progress in the local treatment of ringworm of the scalp since introduction of total x-ray epilation.

TIBOR BENEDEK, M.D.

Chicago

*MODERN MEDICINE, Sept. 1, 1954, p. 116.



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MEDICAL NOTES ... *from* ABROAD

ISRAEL

Aphonia in Infants

Congenital heart disease may be responsible for aphonia in newborn babies. Dr. Otto Tezner of Tel-Aviv observes that phonation in such infants is restricted to a moment at the onset of expiration, after which expiration continues unhindered but without phonation. The phenomenon is apparently caused by paresis of the left recurrent nerve.

Ann. paediat. (Basel) 183:332-336, 1954.

HUNGARY

Vascular Disease of Legs

Lumbar sympathectomy combined with adrenal medullectomy gives better results than sympathectomy alone for vascular disease of the lower extremities, reports Dr. T. Kiss of the University of Pécs.

Surgery is done only when a preliminary lumbar sympathetic block produces improved oscillometrical data and an increase of at least 1° C. in skin temperature. The operation is usually performed in two stages, one side at a time.

The combined operation was employed in 45 patients with Buerger's and Raynaud's disease, arteriosclerosis, lymphedema, and the post-thrombotic syndrome. Initial stages of gangrene receded and subjective symptoms decreased or disappeared completely. No evidence of return of sympathetic tonus was noted after eighteen months.

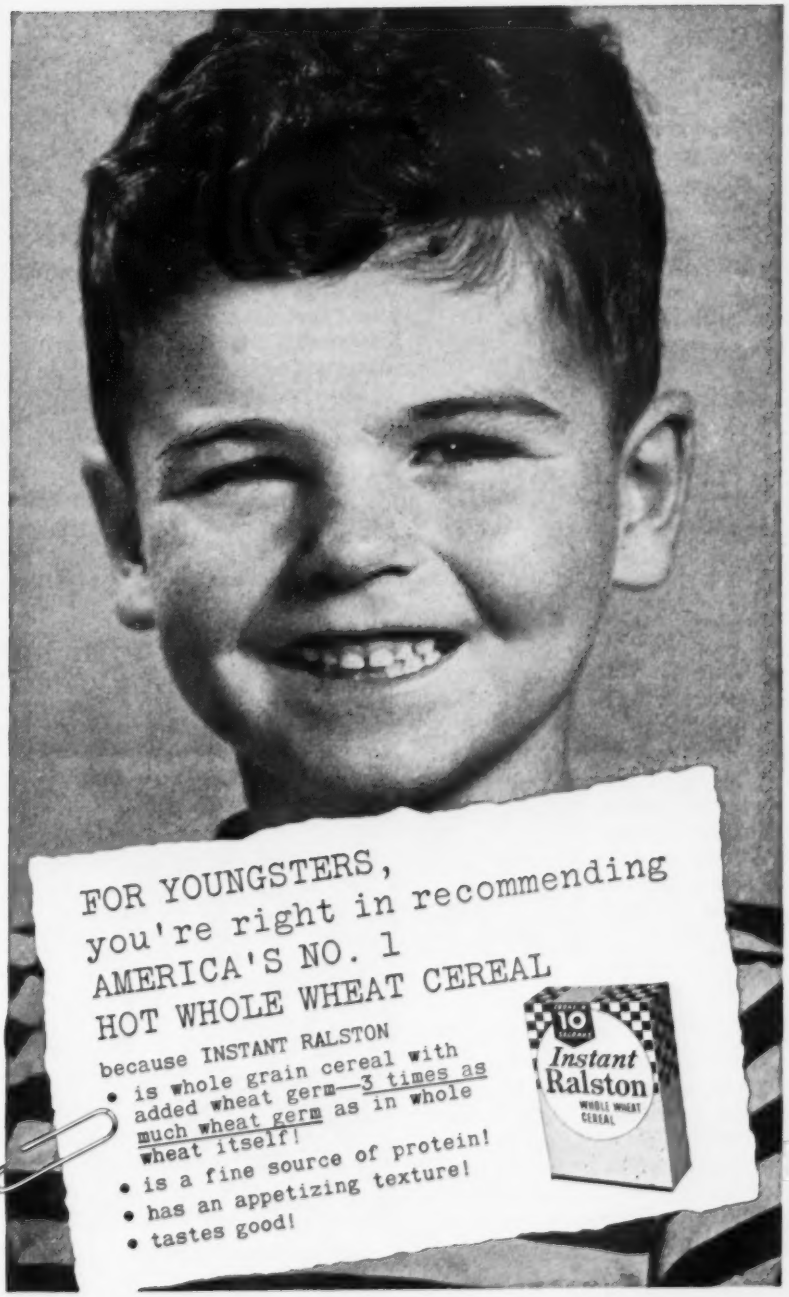
Zentralbl. Chir. (Leipzig) 79:1565-1569, 1954.

FRANCE

Bronchography in Children

Topical anesthesia of the tracheobronchial tree and opacification with Lipiodol can be achieved by using a special vaporizer, state Dr. Caussade and associates of the University of Nancy. The method is particularly acceptable for children over 4 years of age as the process of vaporization is not an inconvenience and good cooperation can be obtained in all phases of the procedure.

After the desired amount of topical anesthetic is vaporized, about twenty minutes is allowed for complete onset of anesthesia; vaporization of Lipiodol is then begun. A small catheter is inserted through the nose, passed through the vocal cords, and advanced to about 1 cm. above the carina. The exact position of the catheter can be verified and adjusted under fluoroscopic examination. The Lipiodol vaporizer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is then set to deliver particles of a 40% solution of the contrast medium. The sprayed Lipiodol settles as a fine layer over the entire bronchial tree, also penetrating into partially obstructed bronchi.

Arch. franç. pédiat. (Paris) 11:831-842, 1954.

Muscle Relaxant

Succinylcholine iodide, a short-acting muscle relaxant, is valuable for bronchoscopy performed under local anesthesia, state Dr. R. Benda and associates of Beaujon Hospital, Paris.

The relaxant effect on skeletal and bronchial musculature allows easier penetration and better visualization of the bronchi; examination of otherwise inaccessible small bronchi is possible.

Topical anesthesia and slight sedation are usually adequate; in tense and apprehensive patients, Sodium Pentothal can be administered to produce light general anesthesia. For the best results, succinylcholine should be injected only after the bronchoscope is introduced into the main bronchus.

Bull. et mém. Soc. méd. hôp. Paris (Paris) 70:871-878, 1954.

Artery Abnormalities

On rare occasions, the left coronary artery of an infant may originate from the pulmonary artery instead of the aorta. Dr. P. Monnet of Lyon states that the most important diagnostic findings are cardiac enlargement and an electrocardiographic pattern consistent with myocardial insufficiency. Heart murmurs are not heard in spite of a very large heart.

The initial phase resembles a gastrointestinal disturbance with the child vomiting frequently. The infant usually eats very poorly, often becoming dyspneic while nursing. Crying spells during feeding are often accompanied by pallor and perspiration and seem to correspond to attacks of postprandial angina in adults. The symptoms increase quite rapidly and are followed by signs of cardiac failure.

Death usually occurs between the fourth and sixth months of life.

Arch. franç. pédiat. (Paris) 11:924-942, 1954.

SWITZERLAND

Spondylolisthesis

In children and adolescents, spondylolisthesis is brought about by progressive gliding of the involved vertebral body. This gliding stops about the age of 25, states Dr. W. Taillard of the University of Zürich.

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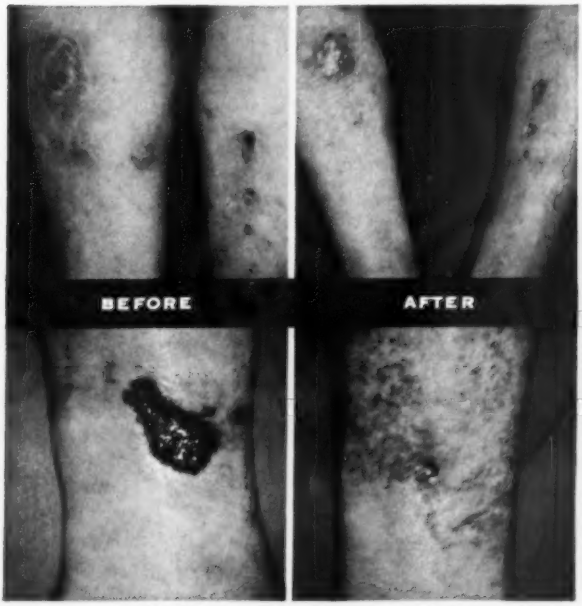

BILATERAL ARTERIOSCLEROTIC ULCERATION in patient age 65. With oral Priscoline, 25 mg. four times daily for one week and 25 mg. every three hours thereafter, there was marked improvement in 2 weeks and healing within 6 weeks.

HYPERTENSIVE ISCHEMIC ULCER in patient age 65. Treated with oral Priscoline, 25 mg. four times daily for four days and 50 mg. every four hours thereafter. Healing completed in 10 weeks.

PHOTOGRAPHS AND CLINICAL DATA COURTESY OF R. I. LOWENBERG, M.D., CONSULTANT, VASCULAR SURGERY, CONNECTICUT STATE HOSPITAL, MIDDLETOWN, CONNECTICUT.

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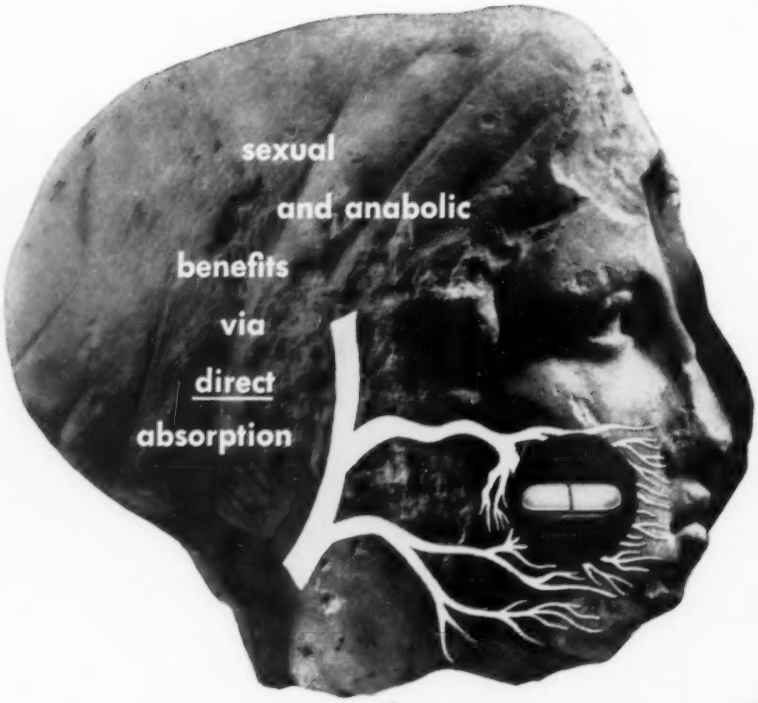

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The most pronounced gliding of the vertebra is seen in young children. In patients under the age of 15, progressive displacement is usually accompanied by pain of radicular distribution. In older children, radicular pain is rare. Prognosis depends on the shape of the fifth lumbar vertebra; an anteroposterior flattening of its body exceeding 30% plus a curved base of the sacrum will increase the degree of spondylolisthesis.

Treatment is mainly surgical, although traction may be effective in young children. In girls, anterior lumbosacral fusion appears to be more advantageous if future pregnancies are considered.

Acta orthop. scandinav. (Copenhagen) 24: 115-144, 1954.

Pneumoperitoneum Effects

When employed for the treatment of tuberculosis, pneumoperitoneum may sometimes be followed by abdominal, circulatory, or nervous complications, according to Dr. René Burnand of Lausanne.

The most frequent complication is painful abdominal adhesions, sometimes leading to an intestinal obstruction. Nonspecific exudative peritonitis and abdominal pain and distention with or without nausea are seen less often. Suppurative or tuberculous peritonitis is rare.

Vasomotor collapse may occur during or immediately after the procedure as a result of strong reflex stimulation caused by rapid

(Continued on page 212)

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filling of the abdominal cavity with air. Cerebrovascular spasm or small air emboli may produce temporary paresis or paralysis, although no permanent central nervous system damage has been observed.

Rev. méd. Suisse Rom. (Lausanne) 74:674-682, 1954.

BELGIUM

Protection from Radiation

Some amines apparently exert a protective action against lethal doses of irradiation, report Drs. Z. M. Bacq and A. Herve.

Several thousand mice were subjected to fatal doses of radiation over a period of several days. The protective substances were injected one-half hour before the exposure, since lethal doses begin to produce irreversible changes in the cellular enzyme systems within a few minutes.

The mechanism of the protective action of the substances is believed to be due to their ability to block or combine with the antienzymatic action of free radicles formed under the influence of radiation.

Strahlentherapie (Munich) 95:215-237, 1954.

RUSSIA

Vaccine for Brucellosis

A dried live vaccine appears to be effective in protecting exposed persons against infection with *Brucellosis melitensis*, state Dr. Z. A. Rozova and associates of the Bru-

(Continued on page 216)

creating new eating habits is the way to ensure permanent weight reduction

Physicians agree that a weight reducing program has two objectives: (1) weight loss and (2) maintenance of weight loss. The second objective is as important as the first and, in many cases, harder to achieve.

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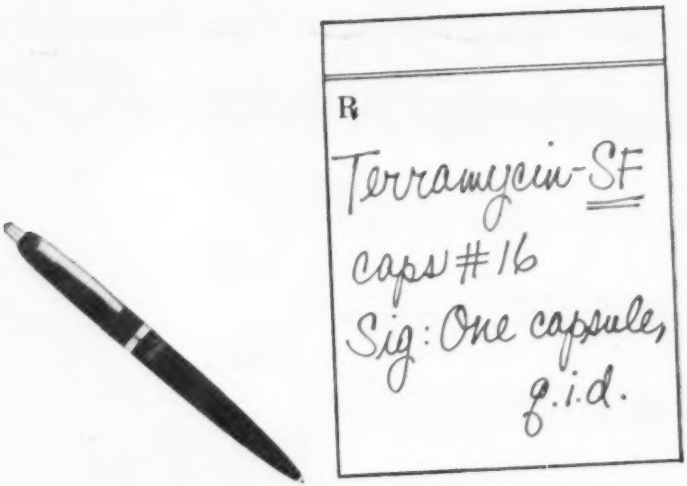

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ORAL SUSPENSION (fruit flavored) 125 mg./5 cc. teaspoonful

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Brand of penicillin G potassium with vitamins

CAPSULES 200,000 units

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cellosis Station, Rostov. Immunity seems to be enhanced if exposure to infected animals continues after vaccination. The vaccine causes few local and general reactions.

I. Microbiol. i Immunobiol. (Moscow) 11:62-66, 1954.

AUSTRIA

Imminent Abortion

Because of its action in decreasing uterine tonus and contractions, adrenalin combined with an estrogen-progesterone preparation is effective for the treatment of imminent abortion, according to Dr. Herbert Heiss of the University of Graz. About 60% of pregnancies may be preserved.

In a series of 110 women, 50 were treated with small doses of adrenalin alone or in addition to other medications. Adrenalin was given intramuscularly in daily decreasing doses, continuing for a few days after bleeding and uterine contractions subsided. Side effects such as tremor, pallor, tachycardia,

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Hyoscyamine Sulfate	0.1037	mg.
Atropine Sulfate	0.0194	mg.
Hyoscyamine Hydrobromide	0.0065	mg.
Phenobarbital (¼ gr.)	16.2	mg.
Kaolin (90 gr.)	6.0	Gm.
Pectin (2 gr.)	130.0	mg.
Dihydroxy aluminum aminoacetate (7½ gr.)	0.5	Gm.

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and palpitations were transient. However, even small doses of adrenalin should not be used in patients with labile or high blood pressure, thyrotoxicosis, or toxicosis of pregnancy.

Zentralbl. Gynäk. (Leipzig) 76:1727-1736, 1954.

GERMANY

Pituitary Hyperfunction

Rapid increase in the number of skin folds on the face and scalp is often an early sign of pituitary hyperfunction.

Dr. Heinrich Bartelheimer of the City Hospital, Berlin, states that the prominent folds appear in parallels on the forehead and occiput and are usually straight and thick. The changes can be observed with acromegaly, thyrotoxicosis, and diabetes of pituitary origin.

Similar signs are also noted in obese hypertensive patients when pituitary function is increased.

Endokrinologie (Leipzig) 31:330-335, 1954.

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CORTICLORON® contains chlorprophenpyridamine gluconate and cortisone acetate.
†Seidmon, E. E. P., and Schaffer, N.:
Ann. Allergy 12:85, 1954.
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Anti-inflammatory • Anti-allergic
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Lymphogranulomatosis Therapy

Actinomycin C compares favorably with other cytostatic drugs in the treatment of lymphogranulomatosis, observes Dr. Gustave Schulte of Knappschafts Hospital, Recklinghausen.

The drug was administered intravenously twice daily for seven days to 100 patients; 43 received only the drug, 57 had x-ray therapy in addition. Best results were obtained in 17 patients who had the disease no more than six months; 10 became symptom free after one series of treatments and had no recurrences during eighteen months of observation. Satisfactory results were obtained in most of the remaining patients, although the therapeutic effects were less when the disease was extensive. X-ray therapy in small doses seemed beneficial and apparently hastened improvement.

No deleterious effects were noted in the blood, bone marrow, liver, spleen, or kidneys.

Strahlentherapie (Munich) 94:491-496, 1954.

Periarteritis Nodosa

Although in adults periarteritis nodosa is more common in males than in females, no difference in sex incidence has been observed in children.

Drs. F. Schmid and A. Weiss of the University of Heidelberg report that the condition is characterized by intermittent fever, tachycardia, leukocytosis, abdominal and mus-

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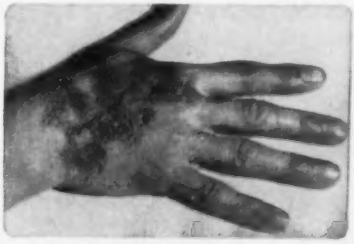

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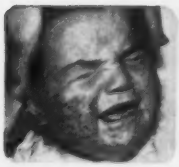

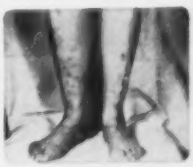

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cular pain, and restlessness. Meningism and renal disturbances appear when the central nervous system and kidneys are involved. The course of the disease can be acute, chronic, or recurrent, and the prognosis is poor.

Findings at postmortem examination indicate that the heart, kidney, liver, spleen, and gastrointestinal tract are most affected by the disease.

Monatsschr. Kinderh. (Berlin) 102:442-448, 1954.

Survival with Sarcoma

Early diagnosis and intensive pre- and postoperative x-ray therapy, particularly of regional metastases, offer the best chances for survival to patients with sarcoma, state Drs. A. Crone-Münzebrock and H. Poppe of the University of Göttingen.

Of 210 patients treated during the last seven and one-half years, 80 patients had spinocellular tumors, 51 osteosarcoma, 38 fibrosarcoma, 29 lymphoreticulomas, and 12 embryosarcoma. The highest mortality rate was found in patients with spinocellular tumor and osteosarcoma. Patients with fibrosarcoma had the lowest death rates.

Radical surgery with extensive removal of tissue and lymph nodes was apparently not of great value, especially in patients with symptoms of more than three months' duration.

Strahlentherapie (Munich) 95:376-388, 1954.

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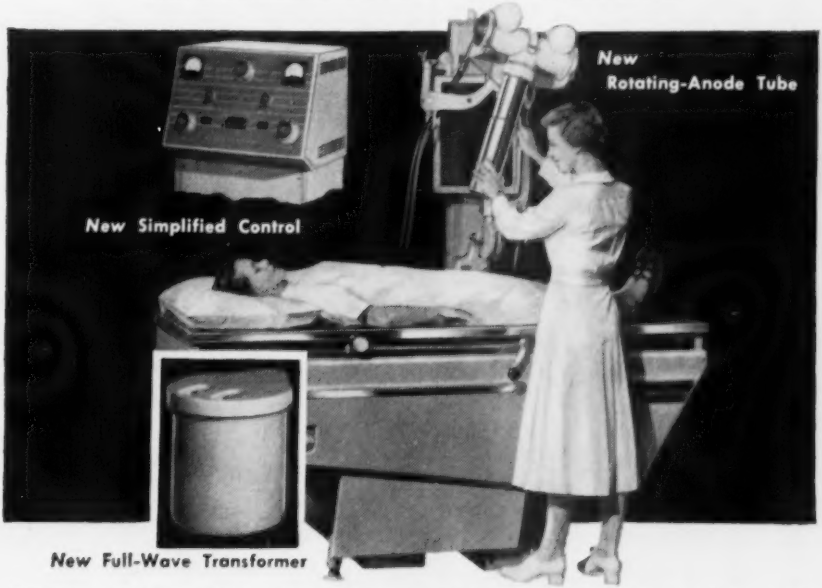

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Shaker Heights, Ohio

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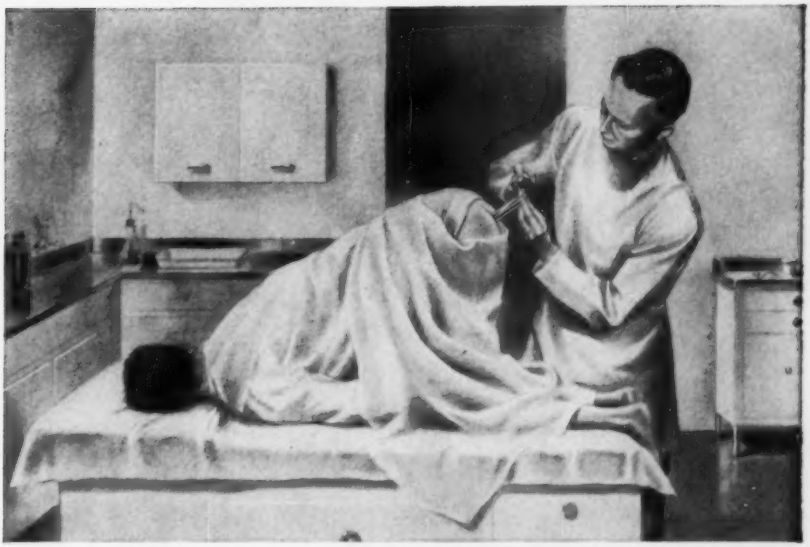

Scene in your office?

Complete anorectal examination – digital, anoscopic, sigmoidoscopic – is rapidly becoming a part of every complete physical examination. This is as it should be, for early diagnosis of cancer and precancerous lesions in this area can contribute greatly to raising the present low percentage of cures. Anorectal examination, as thousands of doctors have discovered, is not an involved or mysterious procedure. It is made even easier by the use of uncomplicated, brilliantly illuminated Welch Allyn anoscopes and sigmoidoscopes, for which your regular WA battery handle serves as the power source. Ask your dealer to show you these practical instruments.

The Welch Allyn booklets "Anal and Lower Rectal Lesions" and "Proctologic Examination" are available from your WA dealer or from Welch Allyn, Inc., Skaneateles Falls, N. Y.

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BASIC SCIENCE *Briefs*

Age and Oxygen Uptake

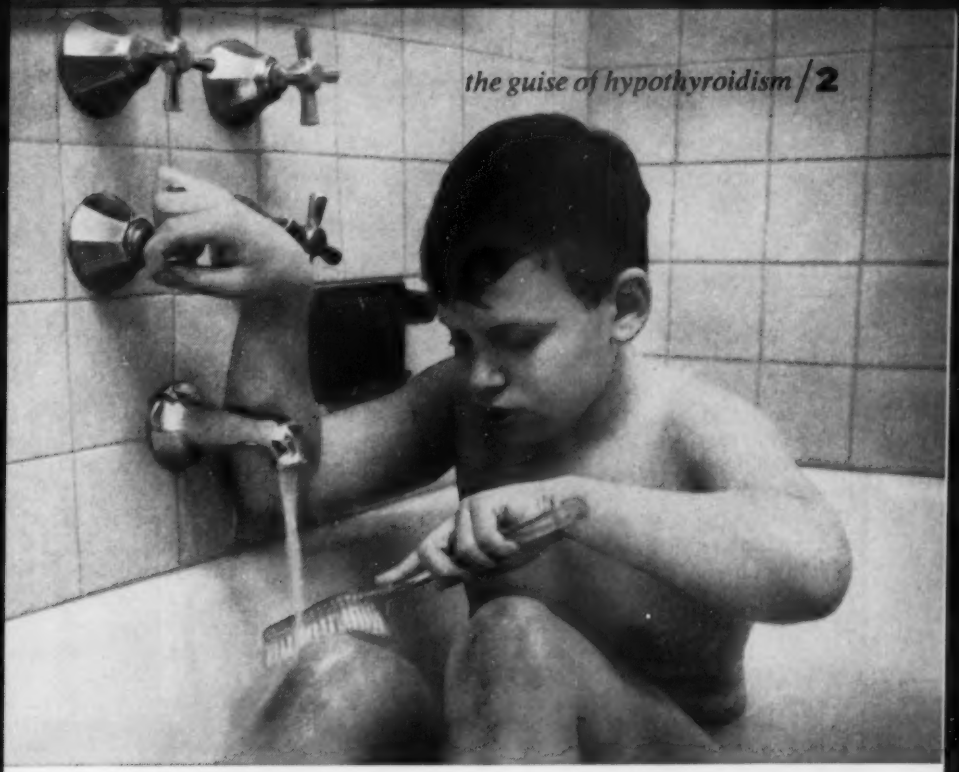
Basal oxygen uptake per unit of body surface area lessens with age, probably because alveolar ventilation is impaired. Basal heat production and carbon dioxide elimination also decrease, although carbon dioxide does not accumulate in the body, report Dr. Nathan W. Shock and Marvin J. Yiengst of the National Heart Institute, Bethesda, Md., and the Baltimore City Hospitals. Breathing rate, total ventilation volume, and tidal volume show no significant trend with age.

J. Gerontol. 10:31-40, 1955.

Cardiovascular Regulation

Pericardial tension due to dilation of the left ventricle under stress limits right ventricular diastolic pressure and expansion. Right ventricular stroke work and pulmonary blood volume and pressures are held at levels lower than expected when dogs with normal pericardiums are subjected to severe left ventricular stress by aortic constriction, report Dr. Erik Berglund and associates of Harvard University, Boston. However, this depression of right ventricular function either diminishes or disappears when the pericardium is opened. Ventriculoatrial regurgitation at high filling pressures is also prevented by action of the normal pericardium.

Circulation Res. 3:133-139, 1955.



Just dirty knees . . . or a significant symptom?

Jimmy has an excuse. There's more to his grimy appearance than meets the eye.

In some children, the first sign of thyroid deficiency may be a hyperkeratosis of the elbows and knees, manifested by stubbornly dirty patches.[1] For hypothyroidism assumes many forms.

To diagnose the condition correctly, and as early as possible, more than the classical tests are often employed.

"A simple and readily available diagnostic test for borderline hypothyroidism" consists of administration of small doses of thyroid over a period of several weeks.[2]

Whenever you employ thyroid for a clinical test or as specific therapy, Proloid assures a smooth, more predictable clinical response. Because Proloid is virtually pure thyroglobulin and assayed biologically, as well as chemically, it is of unvarying potency. It thus eliminates the problem of unwitting over- or underdosage. Prescribe Proloid in the same dosages as ordinary thyroid.

Available in ¼, ½, 1, 1½ and 5 grain tablets and as powder, for compounding.

1. Ber, A.: Acta Endocrinol. *16*:305 (Aug.) 1954. 2. Editorial: J. Clin. Endocrinol. & Metab. *15*:148 (Jan.) 1955.

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Metabolic Effects of Alloxan

Adrenalectomy appears to alter the responsiveness of rats to alloxan. Intact animals injected with the drug show changes within four to twenty-four hours in the concentration of blood glucose, liver lipid fractions, and plasma, muscle, and liver electrolytes. Adrenalectomy, however, prevents hyperglycemia until seventy-two hours after alloxan and completely inhibits lipid and electrolyte changes, finds Dr. Abraham Dury of the Bradford Hospital, Bradford, Pa. Injections of twice the maintenance dose of Lipo-adrenal just before alloxan administration restores alloxan responsiveness in adrenalectomized rats.

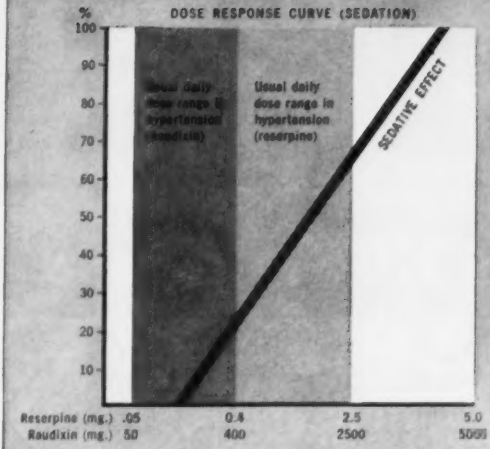
Proc. Soc. Exper. Biol. & Med. 88:267-270, 1955.

Enhanced Corticoid Activity

Very small doses of certain 9 alpha-halo derivatives of adrenal steroids will prevent adrenal insufficiency in adrenalectomized dogs. Fluorocorticosterone is almost 20 times as potent as desoxycorticosterone and is equal to aldosterone, report Dr. W. W. Swingle and associates of Princeton University, Princeton, N.J. The activity of fluoro-F-acetate and chloro-F-acetate is also greater than that of desoxycorticosterone but much less than that of fluorocorticosterone. Marked polydipsia, polyuria, and edema are noted in animals given large daily oral doses of the fluoro-F compound.

Proc. Soc. Exper. Biol. & Med. 88:193-196, 1955.

Why Raudixin is safer than reserpine for the treatment of hypertension



Note that the sedative effect of Raudixin in the usual daily dose range in hypertension is far less than that of reserpine. This explains why Raudixin is much less likely than reserpine to cause excessive sedation and depression.
At the usual daily dose, the hypotensive effect of Raudixin and reserpine is substantially the same.

For this reason, the safer drug --- **RAUDIXIN** is the drug of choice in hypertension.

The usual initial dose of Raudixin is 100 mg. b.i.d. This may be gradually increased or decreased as needed.

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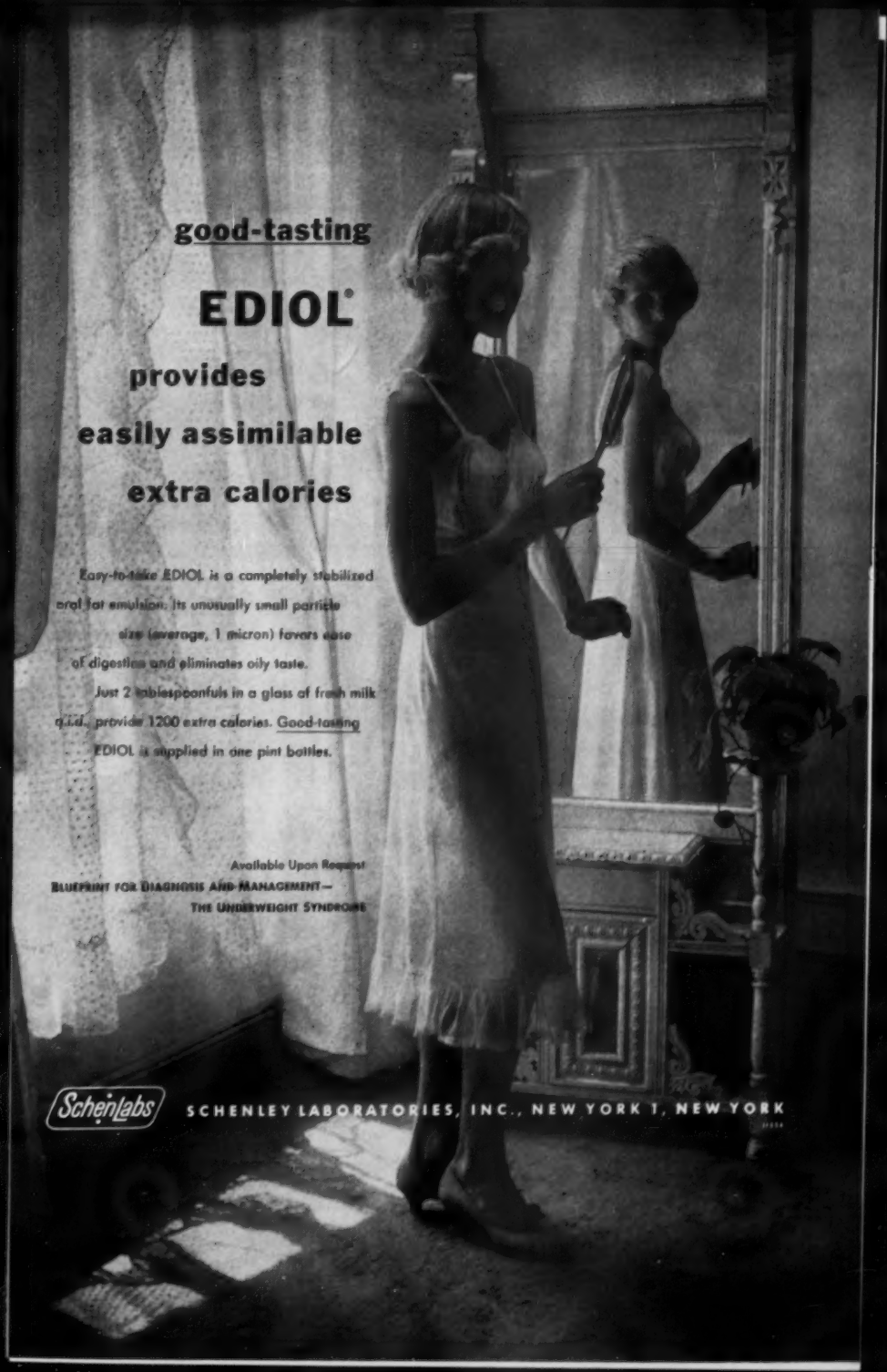
Hundreds of your colleagues, as directors of the American Cancer Society nationally, in Divisions, and with Units, bring the best medical thought to our attack on cancer by education, by research, and by service to patients.

The occasion for this brief salute is the tenth anniversary of the reorganization of the American Cancer Society and the launching of the post-war attack on cancer. Much has been achieved—far more remains to be done. We count heavily on the doctor in our house.

American Cancer Society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short REPORTS

Hormones for Rheumatic Fever

Symptomatic improvement due to cortisone and ACTH therapy in patients with acute rheumatic fever is reflected by changes in the serum protein electrophoretic patterns. Daily doses of 1 to 1.5 mg. per pound of ACTH or 200 to 300 mg. of cortisone for periods of four to ten weeks produce marked increases in albumin with related decreases in alpha$_1$ and gamma globulin, report Dr. Gerard J. Van Leeuwen and associates of the State University of Iowa, Iowa City. Comparable serum protein changes occur weeks to months later with nonspecific therapy. Beta globulin levels remain elevated or sometimes increase, while alpha$_2$ globulin and mucoprotein tyrosine are unaffected. Therapy with the hormones evidently decreases the hypersensitivity processes of rheumatic fever but is probably of little value in prevention of residual cardiac damage.

Am. J. Dis. Child. 89:304-313, 1955.

Why is **KENT** the one fundamentally different filter cigarette?

The more brands of filter cigarettes that are introduced—the more innovations in filtering—the clearer becomes the difference in KENT. Consider for a moment why.

Only KENT, of all filter brands, goes to the extra expense to bring smokers the famous Micronite Filter. All others rely solely on cotton, paper or some form of cellulose.

Indeed, the material in KENT's Micronite Filter is the choice in *many* places where filter requirements are most exacting . . . where filters *have* to work.

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Taste will tell the rest of the story. For KENT's flavor is not only light and mild. It stays fresh-tasting, cigarette after cigarette.

May we suggest you evaluate KENT for yourself, doctor? We firmly believe that, with the first carton, you will reach the same conclusion. As always, there is a difference in KENT. And now more than ever before.

KENT with exclusive **MICRONITE FILTER**

Polyposis and Melanosis

Melanin pigmentation of the oral mucosa and perioral and digital surfaces may be pathognomonic of intestinal polyposis. Although the association of polyposis and melanosis is rare, the characteristic pigment patterns are an indication for constant and intensive medical observation to detect polyposis and possible malignant degeneration in the tumors, believe Dr. W. P. Kleitsch and associates of Creighton University and the Veterans Hospital, Omaha. Persistent observation of a patient with typical melanosis led to removal of a carcinoma in the jejunum and about 11 benign polyps from the small bowel and colon.

Arch. Surg. 70:393-397, 1955.

Goitrogenic Ointment

Resorcinol, a crystalline diatomic phenol, induces thyroid hyperplasia, hyperadrenalism, and hyperpituitarism in rats. With application of 12.5% resorcinol ointment to scarified granulation tissue or subcutaneous injection of resorcinol diacetate, thyroid glands are enlarged and colloid severely diminished, reports Dr. Kenneth C. Samuel of the University of Michigan, Ann Arbor. Characteristic vacuolated cells in the anterior pituitary and the adrenal cortex indicate hyperpituitarism and hyperadrenalism in the animals. Excess iodine ingestion during exposure to resorcinol fails to prevent the goitrogenic process.

Lab. Invest. 4:90-105, 1955.

Effective in Every Type of Vaginitis

AVC Improved cream

Possesses all the advantages of the ideal vaginal anti-infective

	AVC (Cream)	Product A (Liquid or Jelly)	Product B (Powder or Insert)	Product C (Jelly)
Efficiency	Provides broad-spectrum attack against: **bacteria, monilia, trichomonads.**	Effective against **trichomonads only.**	Not effective against monilia.	Effective against **monilia only.**
Convenience	Convenient plastic applicator.	Requires 2 dosage forms: liquid and jelly.	Requires office treatment and home administration. Special douches recommended.	Disposable applicator. Therapy is expensive.
Duration of Therapy	1 month, or 1 menstrual cycle.	Through 2 menstrual periods.	Through 3 menstrual periods, then during menses only for 2 extra months.	20 days — therapy is short **provided vaginitis is due to monilia only.**
Stain	No	No	No	Yes

AVC Improved contains:

Sulfanilamide	15%
9-Aminoacridine HCl	0.2%
Allantoin	0.2%

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Chronic Use of Coffee

Excessive coffee drinking, even as much as 20 to 30 cups a day, is probably not harmful to healthy persons. Nervousness, tremor, sensory disturbances, insomnia, headaches, and a variety of other minor difficulties caused by caffeine are usually not serious and disappear when the use of coffee is discontinued, according to editorial comment in the *Journal of the American Medical Association*. These effects may, however, be harmful to patients with heart, nerve, or intestinal disorders, and the increased gastric acidity induced by caffeine contraindicates excessive use of the beverage for patients with peptic ulcer.

J.A.M.A. 157:1069, 1955.

Prevention of Dental Caries

Testosterone appears to potentiate the anticariogenic effects of thyroid hormone in rats. Desiccated thyroid, incorporated into a cariogenic diet, reduces, while thiouracil increases, the incidence of caries, report Drs. Joseph C. Muhler and William G. Shafer of Indiana University, Indianapolis. Dietary supplements of testosterone combined with thyroid provide greater protection than does thyroid alone, although testosterone alone has no anticariogenic activity. Apparently the anticariogenic effects of thyroid are mediated by the salivary gland, whereas testosterone acts by stimulating thyroid function.

Proc. Soc. Exper. Biol. & Med. 88:191-193, 1955.

Adequacy of Tumor Excision

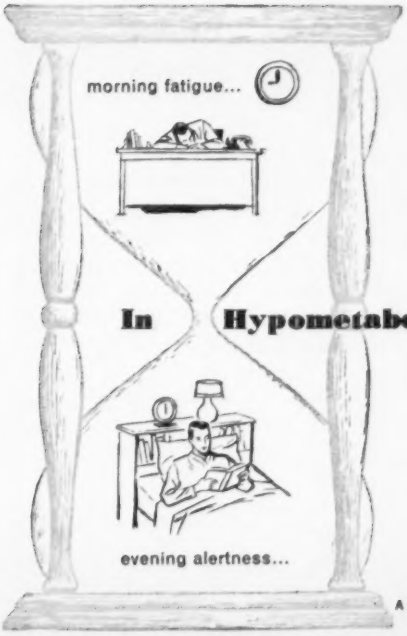
If multiple microscopic studies indicate complete removal of a skin tumor, local recurrences will almost never develop. A pathologic diagnosis of incomplete removal, however, indicates the need for careful observation of the patient rather than immediate additional surgery, believes Dr. Roy N. Barnett of the Norwalk Hospital, Norwalk, Conn. Postoperative observations of 17 tumors, designated by microscopic sections as incompletely removed, demonstrated residual neoplastic tissue in only 3, an error of 82%. No recurrences were observed in 24 patients with tumors diagnosed by microscopic studies as completely excised.

Cancer 8:368-370, 1955.

Typhoid Therapy

Infections with *Salmonella* may be safely and effectively controlled with synnematin B. Daily intramuscular injections of 20 to 87.5 mg. per kilogram for about fourteen days eradicated *Salmonella* organisms from the blood and feces, terminated fevers, relieved toxemia, increased appetite and mental alertness, and produced a sense of well-being in all of 15 patients with typhoid and in 1 with paratyphoid A, report Dr. Lázaro Benavides of the Hospital Infantil, Mexico City, and associates. Relapses occurred in 3 patients but were controlled by continued therapy. Toxic reactions and carrier states were not noted among the patients.

J.A.M.A. 157:989-994, 1955.



When a patient complains of morning fatigue and evening alertness, a diagnosis of hypometabolism should be considered. If, in addition, the patient has two or more of the following symptoms: cold intolerance, brittle nails, dry skin, lack of perspiration or menstrual difficulties, the diagnosis is probable. A slow pulse and a low awakening body temperature make the diagnosis even more secure.

(Watson, B. A.: N. Y. State J. Med. 54: 2049, 1954.)

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prepared exclusively from beef sources . . . provides whole gland medication at its best. Superior uniformity assured by chemical assay and biological test.

Standardized equivalent to Thyroid, U.S.P. tablets of ½, 1 and 2 grains. Bottles of 100 and 1000.

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Familial Trend of Polyps

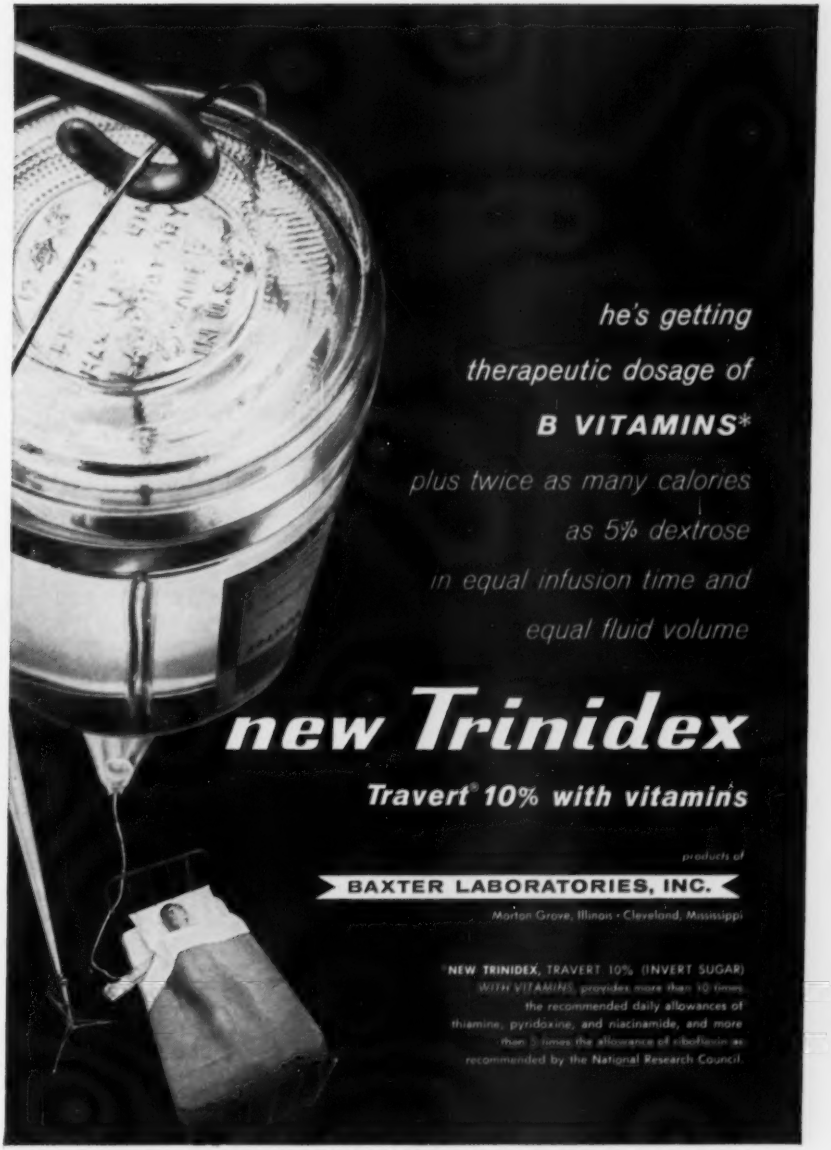
An hereditary factor appears to be involved in the development of solitary gastrointestinal polyps. Dr. Charles M. Woolf and associates of the University of Utah, Salt Lake City, report that rectal or sigmoid polyps were found in nearly half of the third generation of a large Utah family. In contrast, the incidence of solitary polyps in the general population is about 5%. Genealogy of the entire family revealed 4 individuals in the second generation who died of carcinoma of the lower digestive tract, suggestive of polyps as the precancerous lesions.

Cancer 8:403-408, 1955.

Porphyrin Fluoroscopy

Injections of hematoporphyrin provide complete visualization of the gallbladder and entire biliary tree and also clearly delineate lymph nodes and neoplastic tissue. Within two to two and one-half hours after injection of 20 to 40 mg. of hematoporphyrin, the gallbladder and biliary tree exhibit a brilliant red fluorescence when illuminated with ultraviolet light in a semidarkened room, report Dr. George C. Peck of the University Hospital, Baltimore, and associates. Larger doses of 500 to 1,000 mg., given gradually over a six-hour period, provide the most striking fluorescence of lymph nodes and neoplastic masses after twenty-four to forty-eight hours. Necessary precautions include tests for primary sensitivity and care to avoid exposing the patient to sunlight.

Ann. Surg. 21:181-188, 1955.



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Dyscrasia after Gastrectomy

Iron-deficiency anemias after subtotal gastrectomy usually respond to oral iron therapy. Low hemoglobin and serum iron levels and elevated latent iron-binding capacities were corrected in 5 and improved in 2 postgastrectomy patients given oral iron, report Dr. James D. Mason, Jr., and associates of the University of Virginia, Charlottesville. These were the only patients followed up. Of 24 postgastrectomy patients, 15 had obvious anemia, 2 had low serum iron and elevated iron-binding capacities, and only 7 were hematologically normal.

Clin. Res. Proc. 3:67, 1955.

Management of Angina

Coronary vasodilation, occurring after buccal absorption of pentaerythritol tetranitrate (PETN), provides relief of angina pectoris. Although nitroglycerin is more rapidly and completely effective for acute attacks, sublingual PETN increases exercise tolerance, attenuates effort angina, and prevents postprandial coronary distress, report Drs. Travis Winsor and Charles C. Scott of the Hospital of the Good Samaritan, Los Angeles. When taken in oral doses of 69.2 mg. per day for periods up to three months, the drug significantly reduces nitroglycerin requirements. Cardiovascular effects of PETN include slight increase in pulse rate and in the I-J wave of the ballistocardiogram and little or no change in blood pressure, skin temperature, height of pulsations, and relative blood flow to the digits.

Am. Heart J. 49:414-427, 1955.

Aerosol for Asthma

Bronchospasm may be relieved by aerosols of Pamine, a recently synthesized anticholinergic agent. Aerosols containing 0.33 mg. of Pamine (epoxytropine tropate methylbromide) per cubic centimeter significantly increase vital and maximal breathing capacities of patients with chronic bronchial asthma and effectively protect against the bronchospastic effects of intravenous methacoline, find Dr. A. Salomon and associates of Tufts College, Boston. Most effective relief of moderate and severe bronchospasm is obtained by continuous aerosolization of 1 cc. with air pump or with intermittent positive-pressure breathing. Inhalations with a hand-bulb nebulizer may be effective for slight attacks. Dryness of the oropharynx may occur after repeated Pamine exposures, but no cardiovascular side effects are noted even in patients with hypertension, tachycardia, or cardiac disease. The drug may be particularly useful in overcoming latent bronchospasm and in rendering the patients more responsive to adrenergic aerosols.

Ann. Allergy 13:90-95, 1955.

"All I ever get is cuts and bruises. How about giving me a break?"

Gastric Resection Survey

Mortality and morbidity rates after gastrointestinal surgery have steadily decreased with the use of antibiotics, early ambulation, improved anesthesia, and better understanding of fluid balance and biochemistry. Dr. E. Payne Palmer, Jr., of St. Joseph's Hospital, Phoenix, reports that 18 of 194 patients died after gastrectomies during a twelve-year period up to 1952, as compared to 8 fatalities after 163 operations performed during the last three years. Fatal complications during the twelve-year period were probably due to technical failure or accident in 8 instances and were unavoidable in 10. Only 1 of the recent deaths was considered unavoidable.

Arizona Med. 12:107-110, 1955.

Radiogold for Carcinomatosis

Formation of ascites or pleural effusions due to metastatic cancer may be partially or completely inhibited by intracavitary injections of radioactive colloidal gold (Au^{198}). Single or multiple doses of 100 to 350 μc. of radiogold, given intrapleurally or intraperitoneally to 163 patients, completely stopped or greatly retarded fluid formation in about half of the individuals, report Dr. Campbell Moses and associates of the University of Pittsburgh. Although no serious toxic or radiation reactions are induced by Au^{198}, the drug should not be used for patients with intestinal obstruction or extensive pleural thickening or during the terminal period.

Cancer 8:417-423, 1955.

BROMURAL

the non-barbiturate sedative

prescribe Bromural for daytime sedation, one tablet every three to five hours. For sleep, 2 or 3 tablets upon retiring or when wakeful during the night.

BROMURAL, brand of Bromisovalum, monobromisovalerylurea, is available as 5-grain tablets and in powder form.

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1 Natalins® capsule t.i.d. supplies:

Vitamin A	6000 units
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Thiamine	3 mg.
Riboflavin	4.5 mg.
Niacinamide	30 mg.
Pyridoxine hydrochloride	3 mg.
Calcium pantothenate	3 mg.
Folic acid	1 mg.
Vitamin B_{12} (crystalline)	1 mcg.
Iron (from ferrous sulfate)	22 mg.
Veal bone ash to supply:	
Calcium	375 mg.
Phosphorus	188 mg.

Your specifications for Natalins can be filled by your pharmacist . . . and economically, in bottles of 100 and 500.

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Antihistamine Analgesia

Pyribenzamine appears to be a more potent and less toxic anesthetic agent than procaine. Local infiltration and regional nerve block with 1% Pyribenzamine were used in 459 patients for diagnostic, therapeutic, or surgical procedures, with rapid onset of action, prolonged duration of effect, high percentage of success, and low incidence of systemic reactions, report Drs. Albert M. Betcher and Ziang T. Tang of the Hospital for Joint Diseases, New York City. The anesthetic potency of the antihistamine alone or combined with epinephrine appears to be 2 to 4 times as great as that of procaine. Burning, occasional bleeding, erythema, and oozing may occur at the site of injection.

Anesthesiology 16:214-223, 1955.

Acne and Serum Lipids

Changes in the severity of acne vulgaris can be correlated with serum lipid values and dietary fat consumption. Diminished activity of sebaceous glands, reflected by decreases in skin oiliness and reduced numbers of comedones, papules, and pustules, was observed in 15 of 17 patients placed on diets low in animal fat, reports Dr. C. Gordon Vaughn of the University of Minnesota Hospitals, Minneapolis. Exacerbations of acne are observed in patients changed to high-fat regimens. Low-fat diets appear to reduce total lipids without appreciably altering serum cholesterol or phospholipid levels, whereas high-fat diets raise both total lipids and phospholipid levels.

Bull. Univ. Minnesota Hosp. 26:475-479, 1955.

IN "STUBBORN" VAGINAL TRICHOMONIASIS, BREAK

THE HUSBAND-WIFE

CYCLE OF RE-INFECTION

In recurrent vaginal trichomoniasis the husband should always be considered as a source of re-infection. "The male is the important transmitter of Trichomonas vaginalis infestation, while the female eventually becomes a reservoir of infection."[1]

Adam as well as Eve. "Although the vagina is the usual habitat of Trichomonas vaginalis Donné, this parasite has been recorded from the male urogenital tract many times."[2] Karnaky states: "The real focus has been the male generative organ."[3] He found the parasite in the urethra, in the prostate or under the prepuce in 38 husbands among 150 whose wives had recurrent vaginal trichomoniasis.[4]

Husbands rarely show symptoms. In the male, symptoms are absent or usually of minimal degree.[5] Feo found Trichomonas vaginalis in 15.5% of 926 men, all "relatively free from symptoms."[1]

To forestall re-infection. Davis states: "Use of a sheath by the husband has long been advised during the period a woman is under treatment, and should be used permanently if he carries the infection."[6] In recurrent cases the husband should wear a condom at coitus for four to nine months, when the trichomonads will usually die out.[3] Bernstine and Rakoff[5] and Trussell[7] advise similar protection.

Prescribe known quality. To eliminate trichomonads "once and for all," take specific measures to win co-operation of the husband. In prescribing a condom, be selective and take advantage of Schmid product improvements.

When there is anxiety that the condom might dull sensation, the answer is to prescribe XXXX (FOUREX)® skins. Made from the cecum of the lamb, they feel like the patient's own skin, are pre-moistened and do not retard sensory effect. If cost is a consideration, prescribe RAMSES,® a transparent, tissue-thin, yet strong condom of natural gum rubber. SHEIK,® also a fine quality, natural gum rubber condom, is even more reasonable in price.

Any husband, any wife, in your practice, would prefer to hand the druggist your *prescription* for a condom, rather than to ask for it "in public." Isn't that true? This is another instance of diplomacy in medicine to prevent an embarrassing situation. To assure finest quality and earn appreciation for your thoughtfulness, prescribe XXXX (FOUREX), RAMSES or SHEIK condoms by name. Prescribe Schmid protection for as long as *four to nine* months after the wife's infestation has cleared. The protection Schmid condoms afford is the very foundation of re-infection control.

References: 1. Feo, L. G.: Am. J. Trop. Med. *24*:195 (May) 1944. 2. Whittington, M. J.: J. Obst. & Gynaec. Brit. Emp. *58*:614 (Aug.) 1951. 3. Karnaky, K. J.: J.A.M.A. *155*:876 (June 26) 1954. 4. Karnaky, K. J.: Urol. & Cutan. Rev. *42*:812 (Nov.) 1938. 5. Bernstine, J. B., and Rakoff, A. E.: Vaginal Infections, Infestations, and Discharges, New York, The Blakiston Co., 1953, pp. 256-258. 6. Davis, C. H.: West. J. Surg. *63*:53 (Feb.) 1955. 7. Trussell, R. E.: Trichomonas Vaginalis and Trichomoniasis, Springfield, Ill., Charles C. Thomas, 1947.

Test for Cushing's Syndrome

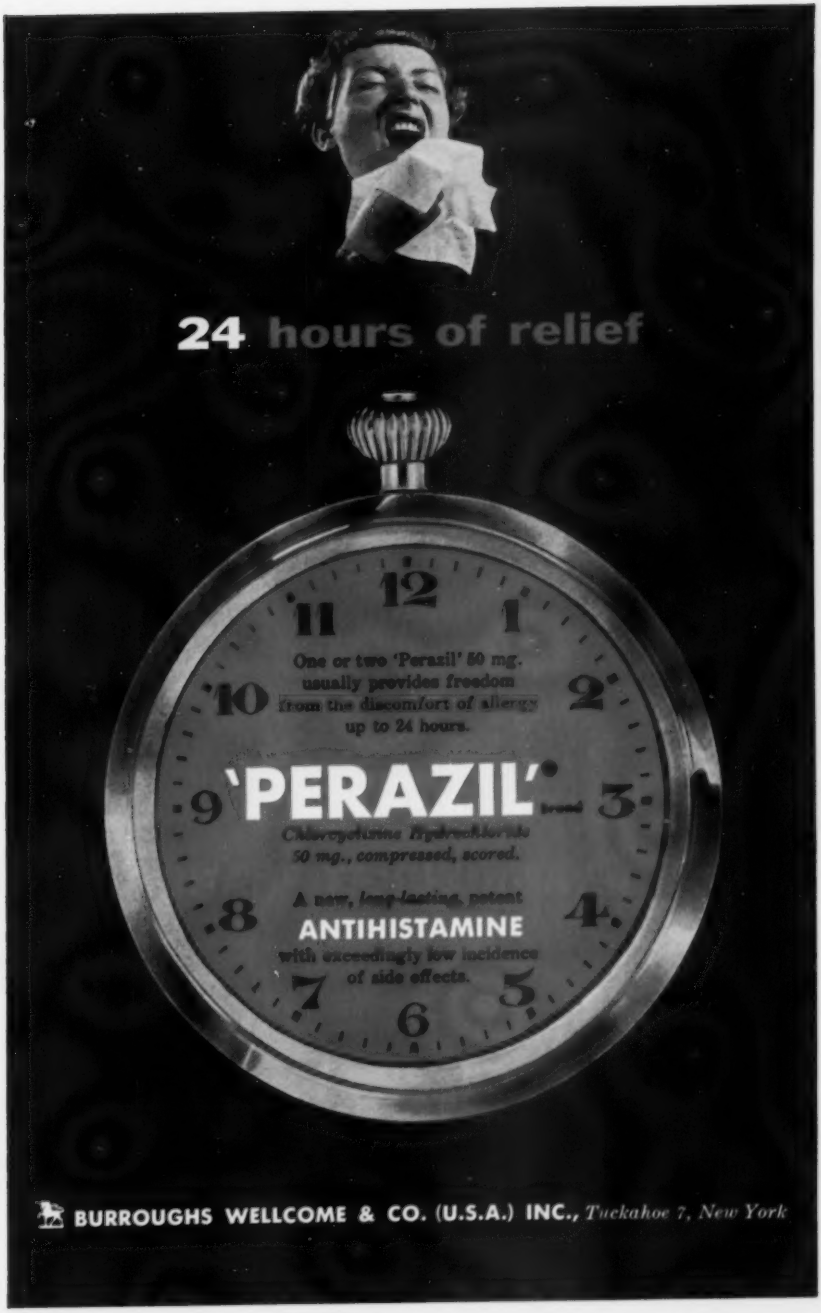
Hyperresponsiveness of the adrenal glands to intravenous ACTH may be indicative of Cushing's syndrome associated with bilateral adrenal hyperplasia. Dr. Melvin M. Grumbach and associates of Johns Hopkins University and Hospital, Baltimore, report that a significant elevation in plasma 17-hydroxycorticosteroids was induced after intravenous ACTH in 2 patients with Cushing's syndrome. Hyperresponsiveness disappeared after radical subtotal adrenalectomy. Little or no rise in the plasma corticoids occurs in addisonian patients, and response is usually normal in patients with virilizing adrenal tumors.

Bull. Johns Hopkins Hosp. 96:116-125, 1955.

Plasma Sterilization

Nontoxic concentrations of beta-propiolactone (BPL) destroy the bulk of virus contaminants in plasma, whole blood, or erythrocyte suspensions. Over a three-year period, 241 patients have received 767 transfusions of the sterilized plasma, and none have had serum hepatitis or toxic reactions, report Dr. Frank W. Hartman and associates of the Henry Ford Hospital, Detroit. Although concentrations as low as 1,000 mg. of BPL per liter of plasma usually destroy most of the activity of the hardiest virus strains, residual contaminants require inactivation by doses 2 to 3 times as large. Ultraviolet light exposure before addition of BPL appears to act synergistically to reduce the amount of chemical required for complete sterilization.

Gastroenterology 28:244-256, 1955.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Regression of Induced Tumors

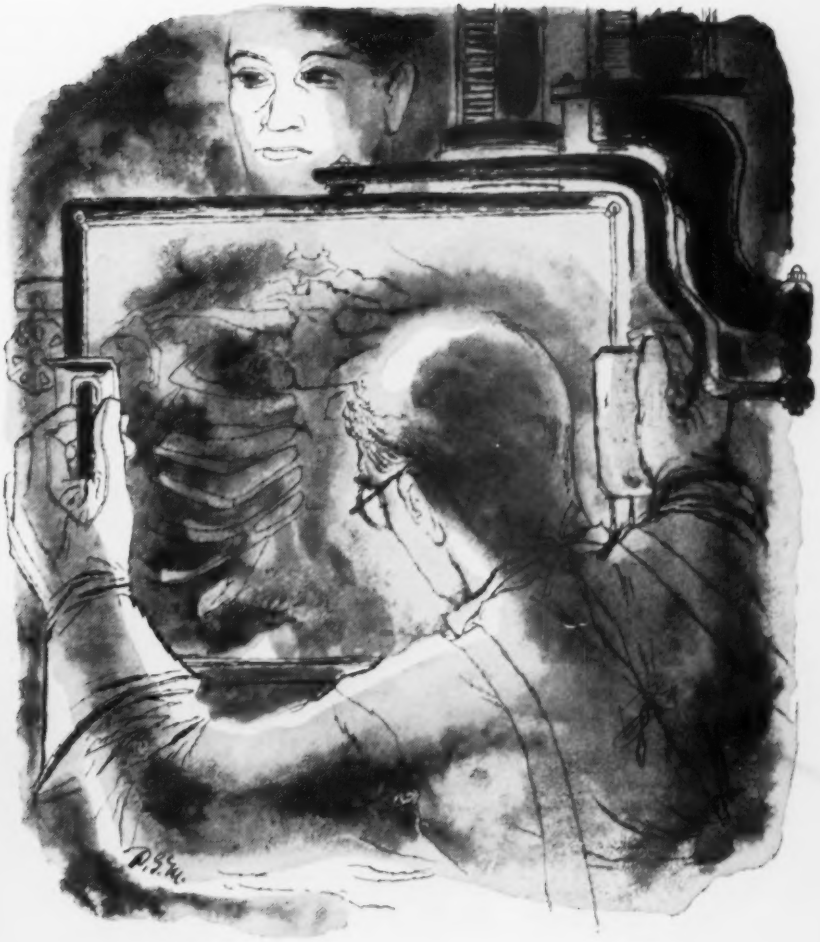
Styryl quinoline compounds produce complete regression of certain transplantable rat lymphomas. Implantation of lymphoma No. 8 produces large tumor masses at the transplant site, lymph node metastases, and death within eighteen to twenty-one days. When animals are fed 0.3% of 4-(p-dimethylaminostyryl) quinoline methiodide or methochloride, incorporated into the diet, the tumors decrease in size and completely disappear within ten days, even though treatment is begun eight to sixteen days after transplantation, report Dr. Boland Hughes and associates of the University of Pennsylvania and the Carson-Newman College, Jefferson City, Tenn. Metastatic growths, which develop in approximately 50% of the survivors, also regress after resumption of oral styryl quinoline.

Proc. Soc. Exper. Biol. & Med. 88:230-232, 1955.

Books Received

1955 MEDICAL PROGRESS edited by Morris Fishbein, 346 pp. The Blakiston Division, McGraw-Hill Book Co., Inc., New York City, 1955. $5

POLIOMYELITIS. A World Health Organization monograph by Robert Debré, Darline Duncan, John F. Enders, Matthieu-Jean Freyche, Sven Gard, James Gear, W. McD. Hammon, Hilary Koprowski, H. C. A. Lassen, Johannes Nielsen, John R. Paul, A. M.-M. Payne, A. J. Rhodes, W. Ritchie Russell, A. B. Sabin, Stéphane Thieffry, and W. Wood, 408 pp., ill. Columbia University Press, New York City, 1955. $8



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Integration of Social Services Needed to Combat Delinquency

LEONA BAUMGARTNER, M.D., AND BERTRAM M. BECK

New York City

*Proper coordination of social services is essential to provide effective control of juvenile delinquency.**

THE rate of delinquency among children under 18 years of age is steadily increasing. In addition, the type of crime committed by the juvenile is more often of a serious nature. In 1953, juveniles were responsible for 45% of all auto thefts, almost 50% of burglaries, about 15% of rapes, and around 5% of assaults and homicides.

Child guidance clinics, recreation centers, counselling services, and provisions for housing have been offered as preventatives to crime by children. However, none of these services is effective alone and no community has thus far evolved an acceptable and integrated program. The agencies for helping delinquent children are also inadequate and almost half of communities with populations over 20,000 do not have officers assigned to work with children. Most counties in the United States lack facilities for detaining juveniles awaiting final court action; only 200 special detention homes for children are in operation.

*Juvenile delinquency. Am. J. Dis. Child. 89:62-69, 1955.

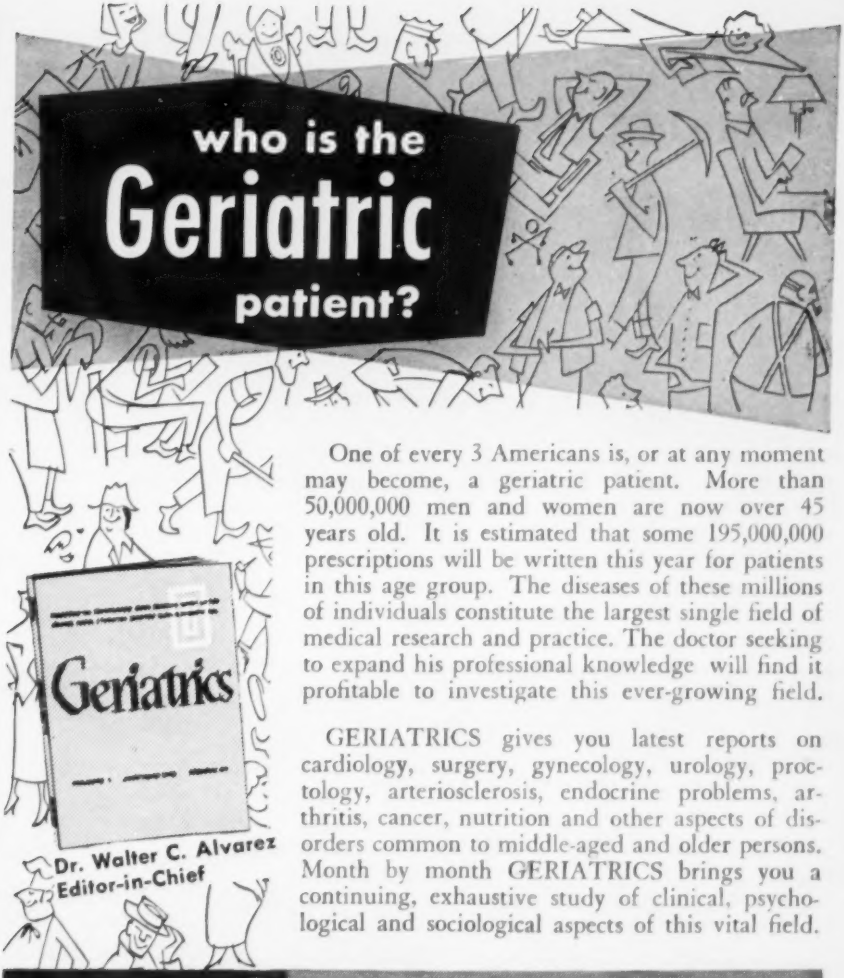
More research is essential if the causes of delinquency are to be understood. Delinquent children are often products of homes in which the parents fail as guides and protectors. During the early period of life, the child receives little understanding and no example of stability. If the family lives in an underprivileged area, the child finds no inhibition to antisocial behavior and hence no hindrance to delinquency. In economically and socially favorable areas, the child may become neurotic rather than delinquent.

Basic prevention lies in efforts to bolster family living. Social programs to advance economic stability and to cope with problems of chronic illness and physical disability in the parents are recommended. Social and psychological services for families threatened with divorce are especially important.

For children showing early signs of maladjustment, prompt remedial work is of substantial benefit. Mental health, group work, and case work services must be provided. Teachers, recreation workers, and parents should be educated to recognize the potentially delinquent child.

Special attention must be given to training programs for juvenile police officers. The aim of such programs would be to promote constructive handling of the child in order not to ingrain feelings of hostility toward authority. Reconstruction of the juvenile court system in most communities is mandatory.

In all communities, a coordinating committee composed of experts in social action and planning and those concerned with providing adequate funds is necessary to promote efficiency and economy.



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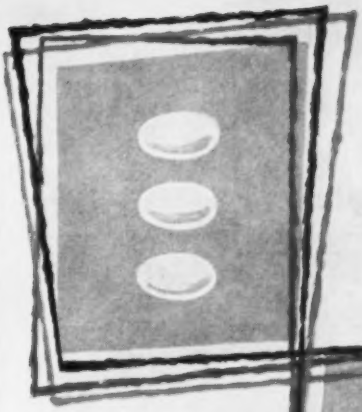

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1. Finnerty, F. A., Jr.: The Value of Rauwolfia Serpentina in the Hypertensive Patient, Am. J. Med. 17:629 (Nov.) 1954.
2. Moyer, J. H., in discussion of Galen, W. P., and Duke, J. E.: Outpatient Treatment of Hypertension with Hexamethonium and Hydralazine, South. M. J. 47:858 (Sept.) 1954.
3. Livesay, W. R.; Moyer, J. H., and Miller, S. I.: Treatment of Hypertension with Rauwolfia Serpentina Alone and Combined with Other Drugs: Results in Eighty-Four Cases, J.A.M.A. 155:1027 (July 17) 1954.

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